

Second Annual Report

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COMMISSION OF CONSERVATION
CANADA

1911

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Commission of Conservation
Canada

HONOURABLE CLIFFORD SIFTON, Chairman
JAMES WHITE, Secretary

SECOND
ANNUAL REPORT

INCLUDING

A REPORT OF THE PROCEEDINGS
OF THE
SECOND ANNUAL MEETING

HELD AT QUEBEC, JANUARY 17-20, 1911


AND OF

THE DOMINION PUBLIC HEALTH CONFERENCE

HELD AT OTTAWA, OCTOBER 12-13, 1910

MONTREAL
JOHN LOVELL & SON, LIMITED

—
1911



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TO HIS EXCELLENCY THE RIGHT HONOURABLE SIR ALBERT HENRY
GEORGE, EARL GREY, G.C.M.G., &c., &c., GOVERNOR
GENERAL OF CANADA

May it please your Excellency :

The undersigned has the honour to lay before your Excellency
the **Second Annual Report of the Commission of Conservation** for
the fiscal year ending March 31, 1911.

Respectfully submitted

CLIFFORD SIFTON

Chairman

OTTAWA, April 29, 1911

OTTAWA, April 28, 1911

SIR :

I have the honour to transmit herewith the Second Annual Report of the Commission of Conservation. This includes a report, of the proceedings of the Second Annual Meeting held at Quebec, January 17 to 20, 1911, a résumé of the work done during the year a statement of opinions given on various projects by the Commission, and a report of the proceedings of the Conference of Dominion and Provincial Public Health Officials, convened at Ottawa on October 12 and 13, 1910.

I have the honour to be

Sir

Your obedient servant

JAMES WHITE

Secretary

HON. CLIFFORD SIFTON,

Chairman, Commission of Conservation

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PROCEEDINGS
OF THE
SECOND ANNUAL MEETING
OF
THE COMMISSION OF CONSERVATION
HELD AT
QUEBEC, JANUARY 17-20, 1911

The Second Annual Meeting of the Commission of Conservation was held in the city of Quebec on January 17, 18, 19 and 20, 1911. The work of the first day consisted exclusively of the business of the Commission, while, during the last three days, members attended the meetings of the Dominion Forestry Convention.

Tuesday Morning Session

The opening session was held on Tuesday morning, January 17th, in the Chateau Frontenac, the Chairman, Hon. Clifford Sifton, presiding.

The following members of the Commission were present:

Hon. Clifford Sifton, Chairman.
Dr. Howard Murray, Halifax.
Mr. Frank Davison, Bridgewater, N. S.
Dr. Cecil C. Jones, Fredericton.
Mr. William B. Snowball, Chatham, N. B.
Dr. Henry S. Béland, St. Joseph de Beauce, Que.
Mr. F. D. Monk, Montreal.
Dr. J. W. Robertson, Ottawa.
Hon. Senator Edwards, Ottawa.
Mr. C. A. McCool, Ottawa.
Mr. J. F. MacKay, Toronto.
Dr. Bernard E. Fernow, Toronto.

Dr. George Bryce, Winnipeg.

Dr. W. J. Rutherford, Regina.

Dr. H. M. Tory, Edmonton.

Hon. W. C. H. Grimmer, St. Stephen, N. B.

Hon. Jules Allard, Quebec.

Hon. J. H. Howden, Winnipeg.

Hon. A. L. Sifton, Edmonton.

Mr. A. S. Goodeve was present to represent British Columbia.

THE CHAIRMAN: The first business transacted is usually the reading of the minutes of the preceding meeting, but as these have already been printed and distributed, I suggest they be taken as read.

The meeting expressed its assent.

The Secretary then read a letter from Mr. John Hendry, of Vancouver, B. C., and a telegram from Hon. F. L. Haszard, Premier of Prince Edward Island, expressing regret that, through unavoidable circumstances, they were unable to attend. A telegram was also read, stating that in regard to one of the representatives of British Columbia, snowslides in the Rocky mountains had held up his train and prevented him from reaching Quebec.

These communications were as follows:

Vancouver, 10th January, 1911.

Hon. Clifford Sifton,

Chairman, Commission of Conservation,
Ottawa.

Dear Sir:—

As my health prevents me attending the Annual Meeting, I am sending a statement of my views in connection with the work of the Commission. I am also sending to the Chairmen of the Committee on Forests and the Committee on Minerals statements of my views with respect to those resources. I shall be obliged if you will have them placed before the meeting, and trust they may be of interest.

I hope you will have a very successful meeting, and remain,

Yours very truly,

JOHN HENDRY.

Charlottetown, P. E. I., January 18, 1911.

Hon. Clifford Sifton,

Chairman, Conservation Committee.

Much regret unable attend Annual Meeting. Impossible leave at present.

F. L. HASZARD, Premier.

Chairman's Address

THE CHAIRMAN: Before we proceed to other business, I think I ought to tell you briefly something of what has occupied us during the past year. My remarks will be necessarily somewhat disjointed, being in the nature of a review, condensed into the briefest possible space, of the work of the year. I will refer you first to the action of the Commission in regard to matters of legislation, premising any remarks with the statement that so far as possible action taken has been authorized by the Executive Committee of the Commission. One of the most important propositions which the Commission has had to deal with, was the proposition to dam the St. Lawrence river. The stand taken was in opposition to the project on a variety of grounds set forth in a memorial presented to the International Waterways Commission. It is satisfactory to know that the result of the opposition manifested by other public bodies, as well as our Commission, has been to prevent the project from being authorized, and from present appearances, it seems unlikely that the persons seeking the authority will be empowered by the United States Congress to carry out their plans without the consent of the Canadian Government. If this be correct, it is quite clear that nothing will be done until full opportunity is given for a thorough discussion of the project.

Opposition was further given to a Bill to incorporate the International Waterways Canal and Transportation Company. This Bill had reference to a proposed canal from lake Superior to the headwaters of the Saskatchewan river, and was regarded as being objectionable on many grounds. The Bill was finally defeated together with a similar Bill which originated in the Senate. Other legislation has from time to time been submitted to the Commission for consideration, and the opinions given have been framed with the object of protecting public rights so far as possible. The extended report will give the details of these transactions. On the subject of waters

and water-powers generally, our hydro-electric engineer, Mr. L. G. Denis, has been diligently collecting information, and his report is now being finally revised for publication. It will be found to contain as full a statement of information respecting the water-powers of Canada, as is at present available. So far as legislation is concerned the resolutions passed by the Commission at its last annual meeting have been communicated by the Commission to the various Provincial Governments and to the Federal Government. In one way and another the question of limited franchise and control of rates is recognized by the laws and regulations of most of the Provinces. Mr. Monk, Chairman of the Committee on Waters and Water-powers, has submitted a Bill to the Dominion Parliament for the purpose of further regulating the granting of water-powers by the Dominion authorities. The terms of this Bill, as submitted, will be one of the subjects of our conference to-day. I may say that my own view is in favour of limiting the term of the franchise to the shortest period compatible with the possibility of raising capital for development, and I suggest, in that connection, the term of twenty years, as the limit. Upon this point, my views are not at all fixed, and it may be that a shorter term can be shown to be feasible. The views which we may express will, in any event, only be advisory, and it will be for Parliament finally to decide the point. I also suggest that we should recommend to the Provincial Legislatures the passage of a short model act or general clauses providing for the case of all persons or corporations applying for authority to sell electric current for light, heat or power to the public. The length of the franchise should be limited to a term of not more than twenty years, and there should be the right to control and revise the rates chargeable to the public through a body to be named by the Legislature for that purpose.

The Committee on Public Health, under the chairmanship of Mr. E. B. Osler, M.P., met in Ottawa, on May 23rd, 1910, and appointed Dr. C. A. Hodgetts, as its Medical Adviser. On October 12th and 13th, a Conference of the Dominion and Provincial Health Officers was held. This conference recommended the passage of legislation respecting the pollution of waterways and the establishment of a Central National Council of Health, also the establishment of a National Laboratory for medical purposes. It was also suggested

that financial assistance be given by the Dominion in respect of the work which is being done to cope with the evil of tuberculosis. The recommendations have been, so far as they relate to Provincial legislation, laid before the Premiers of the Provinces. Those resolutions which require legislation from the Federal Government were placed before Sir Wilfrid Laurier some time ago by Mr. Osler, Chairman of the Committee.

Committee on Lands—On the subject of agricultural work, the Commission was without an expert worker until early in December, when the services of Mr. F. C. Nunnick, a graduate of the Ontario Agricultural College at Guelph, were secured. Since that time he has been busily engaged in digesting the information which, in response to a request from the Chairman of the Committee, has been received from all parts of the country. Inasmuch as Dr. Robertson will address you upon the subject of this work, I shall not take up any time upon the subject.

Committee on Forests—At the Annual Meeting of the Commission and also at the sitting of the Forestry Committee on May 2nd, the setting aside of the Eastern slope of the Rocky Mountains as a forest reserve was recommended to the Government. It is gratifying to know that this area was set apart by Order in Council and, within the last few days, a Bill has been introduced for the purpose of permanently setting apart this reserve, which covers a large area of about 14,600 square miles. This reservation, if properly protected under an adequate appropriation for that purpose, will be one of the most important steps that can be taken in Canada for the preservation of valuable and important forest lands.

The same Committee, on May 2nd, recommended the passage of an Act whereby railway companies should be penalized for allowing fires to spread from their right of way. These recommendations have been placed before the Government by the Honourable Senator Edwards, Chairman of the Forestry Committee. Owing to the prevalence of fires in the province of Ontario and westward, it was determined to make thorough investigations of the causes of these fires. The Forester of the Commission, Mr. W. F. V. Atkinson, and Mr. John Thomson, Forest Ranger, were charged with this work, and made as careful an investigation as possible under the circumstances. The results of these investigations will be printed

in the extended report, in which we shall also deal with a variety of questions relating to this department of our work. So far as possible, it will give an inventory of the standing timber, an abstract of the fire laws and their administration, and a discussion of forest fires and other subjects which relate particularly to the question of Forestry.

Committee on Minerals—Upon this subject, the Commission has taken no decisive action in the way of making recommendations to any of the administrations charged with the control of mining work. We have been, to some extent, handicapped by the fact that there was no member of the Commission who was peculiarly fitted for taking charge of work in this department and so far, therefore, the work has been confined to the collection of information by the mining engineer of the Commission, Mr. W. J. Dick. A great deal of valuable information has been collected, and I hope that this information will lay the foundation of useful work in the future.

Committee on Fisheries, Game and Fur-Bearing Animals—On the subject of Fisheries, Game and Fur-bearing Animals, our report will seek, so far as possible, to lay the foundation for future consideration of this most important subject, by collecting information which is necessary to thoroughly comprehend the position. We shall submit in our report an analysis of the laws relating to jurisdiction, summaries of the principal Dominion and Provincial laws respecting fisheries, statistics showing the production of the chief commercial fish as far back as figures are available, and particularly during the last year. With a great deal of labour, we have had these statistics reduced to terms of weight instead of value, so that an accurate comparison can be made with regard to production. When the production is given in terms of values, it is impossible to make a proper comparison, because when the value rises, it increases the total values and tends to show that the quantity produced has not diminished. There will be a comprehensive report by Mr. M. J. Patton, the Assistant Secretary and Editor, on the Canadian Oyster Industry, which I think will prove of considerable value, and a general review of the character of the fisheries of each Province.

Committee on Press and Co-operating Organizations—Respecting the general carrying on of the propaganda of conserva-

tion, I may say that of 12,500 copies of the First Annual Report, all have been distributed with the exception of a few hundred copies, and very many more could have been distributed, if we had been in a position to supply all the demands received. Twenty-five hundred copies each of Dr. Hodgetts' Address on "Pure Water and the Pollution of Waterways" and the report of the International Commission on Bovine Tuberculosis have also been printed. Press bulletins have been sent out during a portion of the year, but the time of the Assistant Secretary has of late been so taken up with other duties that this part of the work has been put aside. It will be readily understood that, in seeking to grasp the large number of important subjects which have to be dealt with, great difficulty has been experienced in the getting of the right kind of information, and every member of the staff has had his industry and ability taxed to the utmost.

With regard to platform work, I may say that the Secretary gave an address on Conservation at the Irrigation Congress held at Kamloops last summer; Mr. Mackay, Chairman of the Press Committee, has delivered several addresses; Dr. Robertson, in his tour as Chairman of the Commission on Technical Education, has spoken on the subject many times, and I have delivered many addresses myself in response to invitations. Besides this, numerous other methods have been utilized to bring the matter before the public. I note in this connection that the Assistant Secretary has contributed a number of magazine articles upon the work of the Commission.

This will briefly set before you the work which has been attempted during the past year. I may say that very great difficulty has been experienced in determining upon the scope of the forthcoming reports and the method in which the information should be set forth. It has been found altogether impossible to have these ready to present to you at this meeting, and I shall be very well satisfied if we are able to complete and publish them within the next four or five months. So far as the business of this meeting is concerned, I may speak for the members of the Executive in hoping that we shall be able to derive a great deal of assistance by the expression of your views in regard to the work which has been done and to that which will be undertaken in the future. Apart from the work which you may have in mind, it is the intention to submit to you for consideration and discussion a number of matters upon which it is desirable to

secure a deliverance of your opinion. The principal of these questions are the disposition of water-powers upon the proposed Georgian Bay canal and the nature of the regulations under which they should be disposed of; Mr. Monk's Bill *re* Dominion water-powers; proposed legislation on the part of the provinces respecting control of water franchises and rates chargeable therefor; the amendment which has been suggested to the Railway Act as regards forest fires, and the recommendations of the Public Health Conference. In this last connection, special attention has been given to the subject of unsanitary housing and the growth of slums in the cities. It has been considered that this subject was of sufficient importance to ask Dr. Hodgetts to give an address this evening with reference to it. We are also happy in having the presence of Mr. C. C. James, Deputy Minister of the Ontario Department of Agriculture, whose Department is having wonderful effect in the province of Ontario in the promotion of agriculture. He will speak to us on this subject this evening.

We shall now hear Dr. Robertson on the work of the Committee on Lands.

The Work of the Committee on Lands

DR. ROBERTSON said:

My work as Chairman of the Royal Commission on Industrial Training and Technical Education has brought out much useful information bearing directly on the problems of the Commission of Conservation. The *possessions of the people* in their natural resources are being surveyed and considered by the Commission of Conservation, and the *ability of people* to make the most of these in development, to conserve, to utilize and to improve them, is being inquired into by the Commission on Industrial Training and Technical Education.

In regard to waterways and water-powers, forests, fisheries and, to some extent, mines and minerals, something definite towards conservation can be done by means of regulations laid down by legislation. For the protection of the lands, the conservation of fertility and the prevention of the spread of noxious weeds, much less can be done by legislation. Most must be done by means of forming and directing intelligent opinion among farmers themselves and by fur-

nishing such information and guidance as will make them competent and willing to make the best use of their lands. While other resources may be in the hands of a few corporations or companies, the ownership and control of lands are in the hands of multitudes of individuals, each acting separately and individually. Because the task is more difficult and complex, it is none the less needful and advantageous that it should be done well.

Rotation of Crops—For the Committee on Lands last year a survey was made of nine hundred and eighty-five farms, or an average of rather more than one hundred farms for each province. From the survey it was gathered that, of the whole number of farmers visited, not more than nine per cent. follow any intelligent and effective system of rotation of crops. Many farmers take rotation to mean any order of sequence for one crop to follow another. Instead of that, rotation of crops implies that, during each year while the crop is growing, the best preparation is being made in the same field for the succeeding crop and for the preservation of the fertility of the soil and its freedom from weeds. In some localities, the percentage of farmers who follow a good rotation is as high as fifty per cent., in other localities not a single farmer reports any systematic rotation of his crops. Lack of rotation in one large area in the Northwest extending over about five hundred square miles is given as the reason for the destruction of the fibrous material in the soil which formerly held it in place. In the area, the farmers reported that, from want of root fibres in the soil, winds in the spring sometimes carry off the surface soil including the seed, or else leave the seed bare. There are some Western cities that may follow the fate of Nineveh, smothered into oblivion from want of care in protecting the soils. The two following statements are typical of others made by farmers themselves—"Farms are being worn out and are not giving returns they did." "Farmers have thoughtlessly allowed their farms to become more or less overrun with weeds, but now are thoughtful and alert and are combatting the weed pest."

Weeds—With regard to weeds in the Western provinces, wild oats are reported as the worst, all of the one hundred farmers in Manitoba whose farms were surveyed reporting wild oats; seventy-one per cent. in Saskatchewan reported wild oats, and only three per cent. in Alberta. Evidently the vicious weed is travelling and spread-

ing westward. The Russian sow thistle, which is reported new in Manitoba within five years, is a dangerous weed which is spreading at an alarming rate throughout Canada. Sixty-three per cent. of the farmers visited in Quebec report the sow thistle as prevalent, and thirty per cent. of them report it becoming worse. Sixty-seven per cent of the one hundred farms visited in Prince Edward Island report the presence of sow thistle and twelve per cent. of them report it becoming worse. The ox-eye daisy is reported as prevalent throughout portions of Quebec, seventy-four per cent. of the farmers reporting its presence and thirty per cent. reporting it becoming worse.

Wood and Fuel—In the matter of wood-lots on farms for fuel, on the farms which have some supply of trees, the following shows the average of the number of years reported by the farmers during which the wood will last for fuel for their houses:

Manitoba, six years; Saskatchewan, eleven years; Ontario, nineteen years; Prince Edward Island, twenty years.

In other provinces, the wood-lots are estimated to last for over thirty years, and, in Nova Scotia, New Brunswick, and in some parts of Quebec, practically perpetually.

Water in Farm Houses—In the matter of water for house supply, only about ten per cent. of the farmers have running water in the kitchens, most houses depending on wells at some distance. One of the great means of conserving the time, strength and pride in their houses of the women in rural homes would be the provision of an adequate supply of pure running water in the house. In most cases, including the cost of a windmill where that is the best power, the cost need not exceed \$125, and this would cover power, tank and piping. The drinking of impure water has the effect of depressing the vitality of the whole family, making them more liable to disease and resulting in loss of efficiency. These are evils in addition to the occasional cases of fever which come from drinking well water into which the seepage from house or stables has found its way.

Crops Might be Doubled—The survey of the Committee has brought out the fact that if farmers on the average throughout Canada would farm as well as the fifty best farmers whose farms have been surveyed, the result would be the doubling of the quantity of field crops from the land now occupied in Canada within a period of three years. Since the valuation of field crops in Canada ranges from

five hundred and seven to five hundred and fifty millions of dollars per annum, the importance of that possibility is evident. It is not suggested that it is practicable to bring about such a change in three years, but it is my belief that, the quantity of field crops from the farms of Canada could be increased one hundred per cent. within twenty years, and this in addition to all the increase that would be made by the occupation of new lands, and the inflow of new settlers. One of the best means towards bringing about that result or advancing towards it would be for municipal authorities, Provincial Governments and the Federal powers to join in recognizing these best farmers as models, and in holding up the example of their good practice in attractive ways in order that others might follow their systems and methods.

I would like to suggest the enlargement of the Committee on Lands and a continuation and extension of its work along similar lines for next year.

THE CHAIRMAN: I must express my regret that it has not been possible for me to accomplish more than I have done during the last year. I can honestly say that I have never before attempted so large an undertaking nor assumed such a serious responsibility. I am far from satisfied with what I have been able to do.

MR. FRANK DAVISON: Mr. Chairman, you have nothing with which to reproach yourself, on the contrary, an immense amount of good work has been accomplished which is eminently satisfactory to your colleagues and should also be to yourself.

Proposed Legislation re Forest Fires

THE CHAIRMAN: I wish to place before you for your consideration the amendment to the Railway Act, drafted by the Committee on Forests of the Commission, by which it is proposed to make the railway companies responsible for damages to forests by fires set by their locomotives. I shall ask the Secretary to read the proposed amendment.

The Secretary then read the amendment referred to as follows:

The Committee on Forestry, Commission of Conservation, at a meeting held in Ottawa on May 2nd, 1910, recommended that the following sections be added to clause 297 of the Railway Act, Consolidated Statutes, 1906, Chap. 37:—

In addition to the foregoing provisions, and any other provisions applicable thereto, and without affecting or impairing the same, or any of them, IT IS HEREBY FURTHER DECLARED:—

1. For each and every case in which a fire is started by sparks from a railway locomotive, and either begins outside of the right of way or spreads therefrom to adjoining land, the Company which is operating the railway at the time when the fire is started, as aforesaid, shall be liable to a fine of one thousand dollars, to be recovered by summary prosecution before a stipendiary magistrate or two Justices of the Peace.

PROVIDED, that it shall be a sufficient defence against any such prosecution if it be shewn by the Railway Company:

(1). That the Company has used upon the locomotive the best available modern appliance for the purpose of preventing sparks spreading therefrom;

(2). That no negligence has been shewn by the engineer or fireman of the locomotive, or any other servant of the Company, conducing to the starting or spreading of the fire; and

(3). That the Company has maintained an efficient staff of fire rangers, properly equipped with all suitable appliances for fighting fires, and proper and efficient means of travelling from place to place along the line of railway, and that the said staff has been prompt and diligent in taking all possible means to prevent the fire from spreading.

The Committee further recommends that the Act respecting Government Railways be amended to provide:

(1). That the Government railways maintain an efficient staff of fire rangers, properly equipped with all suitable appliances for fighting fires, and proper and efficient means of travelling from place to place along the line of railway; and

(2). That the Government railways shall provide free transportation for all Provincial Fire Guardians, properly certified as such, while travelling in the discharge of their official duties.

DR. FERNOW, in discussing the amendment, stated that he considered it would be construed as placing a limitation on the amount of damages for which a railway company could be mulcted. The present Railway Act made the railways liable to damages up to \$5,000 for fires they caused in cases where the most approved appli-

ances were used and where no negligence had been shown. He feared that the suggested amendment would limit to \$1,000 the damages the railways could be compelled to pay.

SENATOR W. C. EDWARDS, MR. F. D. MONK and the HON. A. L. SIFTON, pointed out that the damages for which railways were liable under the Railway Act, as at present constituted, were civil damages, while the suggested amendment imposed a penal liability. The effect of the proposed amendment would not be to exempt the railways from the civil liability imposed by the Railway Act, and the penalty of \$1,000 would be in addition to whatever damages that might be recovered in a civil action.

HON. A. L. SIFTON suggested that it might be advisable to strike out the provisos in the amendment and leave no loopholes for escape.

THE CHAIRMAN pointed out, however, that the \$1,000 fine was not intended as a retributive measure, but was proposed in order to make the railways adopt those protective measures mentioned in the provisos.

MR. C. A. MCCOOL suggested that the word "efficient" be changed to "sufficient" before the word "staff" in the third proviso of section 1 and also in sub-section 1 of the clause referring to Government railways. This was agreed to unanimously.

HON. W. C. H. GRIMMER declared that the Intercolonial Railway was perhaps the greatest offender of all in the matter of forest fires. In fact, the whole country through which it had passed had been devastated by fires caused by its locomotives. The management had persistently ignored every effort of the provinces through which it passed to protect their forests against the fires for which it was responsible. Especially was this the case in New Brunswick, where the provincial authorities were told by the management, who defied all precautionary measures, that the Intercolonial Railway was subject only to the provisions of the Canada Railway Act. Until last year the Provincial Government was even compelled to pay transportation for fire rangers to put out fires started by the Intercolonial along its route. Thanks to the efforts of the Commission of Conservation, the Intercolonial had, last year, consented to give free transportation to a number of their fire guardians and a somewhat better disposition toward fire protection was now shewn on the part of the railway officials.*

* Note:—The Minister of Railways has since stated that he will authorize such transportation as may be reasonably necessary for fire rangers.

DR. J. W. ROBERTSON and MR. JAMES WHITE referred briefly to the excellent results that had been obtained by the T. & N. O. Railway in preventing forest fires along its line of railway.

HON. RICHARD TURNER spoke as a sufferer from forest fires set by railways and supported the resolution. He said that fires were started by coals from the ash-pans of the locomotives as well as by sparks from the smoke-stacks.

The meeting endorsed by resolution the proposed amendment to the Railway Act with the verbal amendments suggested by Mr. McCool.

It was moved by Senator W. C. Edwards, and seconded by Hon. W. C. H. Grimmer:

THAT WHEREAS, since the last meeting of the Commission the Hon. A. L. Sifton has succeeded the Hon. A. C. Rutherford as Premier of Alberta, the Hon. J. H. Howden, Provincial Secretary of Manitoba has succeeded the Hon. A. H. Armstrong as a member of the Commission and the Hon. W. R. Ross has succeeded the Hon. Price Ellison as Chief Commissioner of Lands and Works for British Columbia;

Therefore, be it resolved that these gentlemen replace their predecessors on the Committees on which the former were members. Carried.

On motion of Dr. J. W. Robertson, seconded by Dr. W. J. Rutherford, it was resolved that Dr. H. M. Tory, Dr. C. C. Jones and Mr. Frank Davison be appointed as members of the Committee on Lands.

THE CHAIRMAN: The first business to be taken up at the afternoon sitting will be the bill introduced into the House of Commons by Mr. Monk, to regulate the granting of water-power privileges by the Dominion Government. While undoubtedly action is necessary, I cannot say that I am in favour of every detail of Mr. Monk's bill. I make this statement now because the bill is to come up before us the first thing this afternoon and I wish everyone to consider it in the meantime. I am not in sympathy with the provision in the bill as to the term of alienation. I think fifty years is too long. In my opinion twenty years would be long enough. By the kind permission of the

Hon. Mr. Allard the afternoon sitting will be held in the Private Bills Committee Room in the Provincial Parliament Buildings.

The meeting then adjourned to meet again at 2.30 p.m. in the Provincial House of Parliament.

Afternoon Session

The Commission reassembled in the House of Parliament after luncheon, the Chairman, Hon. Clifford Sifton, in the chair, and proceeded at once to the consideration of Mr. Monk's bill now before the House of Commons, to regulate the granting of water-powers by the Dominion Government.

Water-Powers.—MR. MONK explained the details of his measure, pointing out that its main provision was that there should be no alienation of any water-power by the Government until the case had been referred to the Conservation Commission, whose mission it was to study carefully all such matters. He laid particular stress upon the contention that the best intentioned minister or council of ministers might not be possessed of any very considerable technical knowledge of the value or conditions surrounding the water-powers which it might be proposed to alienate, and that it was consequently in the public interest that the case should be referred for report to a commission created for the express purpose of studying this and kindred matters.

SENATOR EDWARDS held that one general bill could scarcely be framed on this subject that would satisfactorily apply to all parts of Canada. Great care needed to be exercised in this matter, for injudicious legislation might easily prevent development of natural resources, and in this particular instance, development meant conservation. In developing a water-power it was necessary to remember that to do so to the best advantage it was necessary to develop the entire power at once and not piecemeal. This meant that much of the developed power, which was a most expensive product, must often remain idle for a considerable time until a demand arose for it. If the period of the lease were too short, capitalists could not be expected to invest the large sums of money which most developments required.

THE CHAIRMAN asked Mr. Edwards for his opinion as to the limit of the term of alienation, and if he did not think fifty years too long.

SENATOR EDWARDS said he was inclined to prefer a hundred years to fifty, because he did not think that the Government should have the right to terminate a lease at all when the power had been developed for a certain industry, to the extent of, say, ten thousand horse-power.

HON. MR. ALLARD said that, although Mr. Monk's bill would not affect water-powers under provincial control, legislation on the subject by the Dominion parliament would necessarily influence that of the provinces more or less. He favoured the lease rather than the sale of water-powers over five hundred or even over two hundred horse-power, and by public auction or tender unless there was good reason for the contrary. He also declared himself in favour of a reasonably long term of lease, but did not think the law could be made uniform for all the provinces.

MR. J. F. MACKAY said he had heard a good deal of criticism of the proposed term of fifty years for the duration of the lease, and said that things moved so quickly in these days that legislators were justified in exercising the greatest caution in granting franchises or leases of public property. In this age of such rapid railway and electrical development, a few years' time tremendously enhanced the value of such privileges.

PREMIER SIFTON, of Alberta, said that his province was deeply interested in this matter, having extensive water-powers which are still under the jurisdiction of the Dominion. He suggested that instead of fifty years the period of alienation should be fixed at not more than twenty years.

MR. MONK pointed out that his bill did not positively state the period of alienation was to be fifty years, but that it was not to exceed that period. He believed that in cases of large undertakings the term should be reasonably long.

SENATOR EDWARDS asked that Mr. Bronson, of Ottawa, might be heard, on account of his experience with large water-powers, and explained that neither he nor Mr. Bronson were personally interested in the matter under discussion, since they practically owned in perpetuity, large water-powers on the Ottawa river.

MR. BRONSON explained in detail the lease under which hydraulic lots at Ottawa were leased from the Dominion Government. It was by a lease which provided for renewal in perpetuity. The cost of developing the whole of the power would probably amount to \$25,000,000.

He explained that on the subject of the cost of developing water-powers there was very widespread error. He quite agreed that it was equitable that water-powers, the property of the people, should return an annual rental for their use, and that leases of such powers should be made for fixed terms, renewable upon reasonable conditions. He thought that in view of the great expense involved in the development of such properties, fifty years would not be too long a term, while the provision in the draft bill submitted to the Commission proposing that renewals should first be offered to former tenants and in the event of non-acceptance by them, improvements made by such tenants should be valued and paid for by the succeeding lessee, seemed equitable.

As instances of leased water-powers he cited the hydraulic lots at the Chaudiere, Ottawa, where the Dominion Government had leased water-powers upon twenty-one year terms, renewable in perpetuity at the original price of \$100 per lot per year. The water-powers leased by the Ontario Government in the Cobalt district were leased upon somewhat similar terms. The rental charge was fifteen cents per horse-power, per year, but except under certain conditions, the improvements made by the original lessee could be taken over by the Government without compensation.

THE CHAIRMAN expressed the belief that it might be difficult to get any bill through the House in the exact shape in which they might choose to recommend it and proposed that the Commission should suggest certain resolutions embodying its views on the subject, which might be forwarded to the Government and placed before the Committee of the House to which the bill would be referred after its second reading. These resolutions should set forth only the general principles recommended by the Commission.

On motion of Mr. J. F. Mackay, seconded by Hon. Mr. Howden, a special committee consisting of Hon. A. L. Sifton, Hon. Jules Allard and Mr. F. D. Monk was appointed to prepare the resolutions in question, and to submit them at the close of the evening sitting.

THE CHAIRMAN expressed a desire to hear the question of the fisheries in the Maritime Provinces discussed by some of the representatives present, and invited the Hon. W. C. H. Grimmer, of New Brunswick to address the Commission.

HON. MR. GRIMMER explained that there was a certain conflict

between the government of the Dominion and those of some of the provinces on fishery questions. In the case of inland fisheries, which were the property of the provinces, these latter leased them or issued licenses to parties to fish under certain conditions. The Dominion Government, on the other hand, had exercised the right of saying when these waters should be fished and when not, by enacting the close seasons. It had also passed upon the methods that might be pursued in the fishing. The conflict of authority was such that clashes often occurred between guardians of the Dominion and those of the province of New Brunswick.

THE CHAIRMAN then called upon Dr. B. E. Fernow to read a paper on "The Swedish Conservation Law." Dr. Fernow's paper will be found at the end of this report with the other papers read at the meeting.

MR. E. T. D. CHAMBERS, Secretary of the North American Fish and Game Protective Association, suggested that the Commission might be able to do something towards the conservation of large game in the different provinces if it could bring about some arrangement whereby warrants issued in one province against offenders who cross over the boundary to illegally kill game in another could be executed in whatever province the offender could be found. He instanced the case of offenders from New Brunswick killing game in Quebec and escaping back to their own province.

THE CHAIRMAN said the Commission might be able to do something in the matter, by suggesting the requisite action.

HON. MR. GRIMMER said that his province had to put up with this condition of things from Quebec people on one side and from Maine people on the other. He would like to see something done along the lines suggested by Mr. Chambers.

The Commission then adjourned until the evening.

Evening Session

The third session of the Commission on Tuesday evening, January 17th, was a public one, held in the Legislative Council Chamber of the Provincial Parliament Buildings.

Resolutions *re* Development of Water-powers—At the conclusion of the public meeting, the committee appointed at the afternoon sitting to report on Mr. Monk's bill respecting water-powers, submitted the following report:—

Mr. Chairman:

Your Sub-Committee beg leave to report the following resolutions:

RESOLVED that, having had under consideration Bill No. 49, introduced into the House of Commons, to regulate the disposition of water-powers under control of the Government of the Dominion, the Commission, while approving of the general principle of the Bill, is not in a position, at present, to express a decided opinion upon all the details thereof.

IT IS FURTHER RESOLVED that an Act of Parliament should be passed providing:

FIRST, that all grants or alienations should be for a limited period.

SECOND, that the grant should only be made after a full report upon the power in question, its value, capacity and other material characteristics, has been obtained from a competent authority designated for that purpose.

THIRD, that a fair commercial value shall be fixed at the time of alienation, and that said rental shall be subject to revision at stated periods.

FOURTH, that the rates to be charged to the public shall, in all cases, be as in the case of railway rates, first approved and subsequently subject to revision by the Railway Commission of Canada.

FIFTH, that in the case of any application for a charter by a company intending to deal with power previously alienated by the Crown, which shall authorize the sale to the public of power, a similar provision should be inserted in such charter making the rates to be charged to the public subject to authorization, in the first instance, and subsequently to revision, by the Railway Commission.

(Sgd.) ARTHUR L. SIFTON.
F. D. MONK,
JULES ALLARD.

This report was unanimously adopted.

Committee Meetings—Meetings of the Committee on Press and Co-operating Organizations and of the Committee on Lands were held in the Chateau Frontenac. The following is a record of the business transacted at these meetings:

Press and Co-operating Organizations The Committee on Press and Co-operating Organizations met on the morning of January 19, 1911, the chairman, Mr. J. F. Mackay, presiding.

The following members of the Committee were present: Mr. J. F. Mackay (chairman), Dr. Howard Murray, Dr. George Bryce, Dr. H. M. Tory.

Moved by Dr. Murray, seconded by Dr. Tory:

That 15,500 copies of each volume of the Annual Report of the Commission for 1911 be issued. Carried.

Moved by Dr. Bryce, seconded by Dr. Tory:

That "separates" of papers appearing in the Annual Report be also published in pamphlet form and distributed among specially interested people. Carried.

Moved by Dr. Bryce, seconded by Dr. Murray:

That a press bulletin be issued weekly to all newspapers in Canada, and that an assistant to Mr. Patton, the Assistant Secretary and Editor, be appointed, in order that he may be enabled to devote his time more exclusively to this class of work. Carried.

Moved by Dr. Tory, seconded by Dr. Murray:

That the Superintendents of Education of the various provinces, and the Principals of the High Schools and Collegiate Institutes, be written to with a view to placing the press bulletins in their hands. Carried.

On motion of Dr. Murray the Committee adjourned *sine die*.
Approved.

(Sgd.) J. F. MACKAY,
Chairman.

Committee on Lands A meeting of the Lands Committee of the Commission of Conservation was called on the morning of January 18, 1911, by Dr. J. W. Robertson, chairman of the committee, for the purpose of discussing work done in 1910 and planning work for 1911. The members present were: Dr. J. W. Robertson, Dr. George Bryce, Hon. Sydney Fisher, Dr. W. J.

Rutherford, and the new members of the committee, viz., Dr. H. M. Tory, Mr. Frank Davison and Dr. Cecil Jones. Prof. Lohead, of Macdonald College, was also present by request.

The work of 1910 was reviewed and discussed and each part of the previous day's report of the Committee on Lands was discussed more in detail.

It was decided to undertake another agricultural census in 1911 similar to that of 1910, *i.e.*, a survey of one hundred representative farms in each province by competent men, who will visit the farms and by personal observation and by interviews with the farmers, obtain information regarding the number of acres in crops, pasture, woods and fallow; the rotations of crops, if a rotation is followed; selection of seed; uses of manures and fertilizers; prevalence of weeds and the causes; pests and water and wood supply. It was decided, in order to get uniform results, that the Agriculturist of the Commission should confer with the field men in various parts of the Dominion and instruct them regarding the obtaining of the information and that he should visit the men again while engaged in the actual work.

It was roughly estimated that the cost of the census would be about \$5,000.

Dr. Bryce asked that an additional section (to be named later) be visited in Manitoba to make the returns more representative.

One of the members suggested that wherever the men engaged last year gave satisfaction, an effort be made to have the same men do the work in 1911. The suggestion met with approval.

All the members of the committee present expressed the intention of co-operating in the work of the committee as it related to their respective provinces.

Resolutions Adopted by the Dominion Forestry Convention

The Convention of the Dominion Forestry Association which was participated in by the members of the Commission, as a result of its deliberation adopted, among others, the resolutions contained in the appended Report of the Committee on Resolutions. Of these, Resolutions 5, 6, 7, 8 and 9 endorse action which the Commission of Conservation has been especially endeavouring to secure.

Hon. W. C. H. Grimmer, Chairman of the Committee on Resolutions, reported in part as follows:—

The Committee on Resolutions having considered the several matters submitted to them, beg leave to submit the following resolutions for the consideration of the Convention:

5. *Whereas*, it is a matter of notoriety that the loss of a large proportion of our forest wealth is due to the fires set by locomotives passing through our wooded areas, and whereas the Dominion "Railway Act," R. S. C., Cap. 37, Section 298, provides as follows:—

"Whenever damage is caused to crops, lands, fences, plantations, or buildings and their contents, by a fire, started by a railway locomotive, the company making use of such locomotive, whether guilty of negligence or not, shall be liable for such damage and may be sued for the recovery of the amount of such damage in any court of competent jurisdiction; Provided, that if it be shown that the company has used modern and efficient appliances and has not otherwise been guilty of any negligence, the total amount of compensation recoverable in respect of any one or more claims for damage from a fire or fires started by the same locomotive and upon the same occasion, shall not exceed five thousand dollars.

"(2) The compensation, in case the total amount recovered therefore is less than the claims established shall be apportioned amongst the parties who suffered the loss as the court or judge may determine."

Therefore Resolved, that with the sole idea and motive of compelling the Railway Companies to exercise great care in the operation of their lines through wooded areas, it is advisable in the interest of our public forests, and other wooded areas, that the said section 298 be amended so as to leave the Railways responsible for all damages that may occur through fires set by their locomotives.

6. *Resolved*, that this Convention wishes to place on record its heartfelt satisfaction at the great advance in the appreciation of forest preservation throughout the Dominion, and recommends that in all forest lands controlled either by the Dominion or by the Provinces there should be a more systematic development of forest protection by educated forest inspectors, fire rangers, fire lines, fire roads, telephone lines, etc., etc., and that as the value of the forests has increased there should be more adequate amounts spent for protection.

7. *Resolved*, that this Convention approves of the legislation introduced by the Dominion Government for the setting aside of a for-

est reserve on the eastern slope of the Rocky Mountains for the purpose of protecting the forests and the water supply, and would strongly recommend a sufficient appropriation by Parliament for its proper supervision and development.

8. *Resolved*, that it is expedient in the public interest that the Provincial Governments should consider the question of controlling fires set out for the clearing of lands adjoining forests, and should promote such legislation as will prevent the same spreading into the neighboring forests, thus also protecting the settlers and their property.

9. *Resolved*, that this Convention approves of the action of the Governments of Ontario, Quebec and British Columbia in requiring that timber cut on Crown lands be manufactured in Canada, and would be pleased to see the other Provinces follow their example.

10. *Whereas*, the forests of Canada are a great national asset, and whereas the welfare of our agriculture, health and climatic conditions, as well as the national prosperity of the country depend upon the proper and scientific care of the forest areas.

Therefore Resolved, that this Convention commends the action of the Province of Quebec in employing technically trained Foresters in its service, and recommends to the other Provinces of Canada the importance of this policy.

11. *Resolved*, that in the opinion of this Convention the establishment of fish hatcheries in the Province of Quebec is important, and that the teaching of pisciculture should be a part of the curriculum of the Forest School of Quebec.

12. *Whereas*, roads and highways are great factors in the development and protection of our forests and means of improving transportation all through the country.

Therefore Resolved, that this Convention thinks it highly desirable that a national highway should be built from the Atlantic to the Pacific, also recommends to the Provincial Governments the increasing of their subsidies for the building of new roads and the improving of existing highways, and expresses the opinion that the counties and municipalities of the Dominion should encourage more efficiently the improvement of roads within their limits.

At the Tuesday evening session the following address was delivered by Mr. C. C. James, Deputy Minister of Agriculture for Ontario:

AGRICULTURAL WORK IN ONTARIO

BY C. C. JAMES

Deputy Minister of Agriculture for Ontario

AGRICULTURAL organization in Ontario began after the calling of the first legislature in 1792. Lieutenant-Governor Simcoe in his planning for the development of the province assisted in the organization, and probably was the prime mover. Down to 1846, societies here and there throughout the province gave stimulus to the growing of grain, the importation of stock and improvements in agricultural methods. In 1846, a provincial association was formed, through which, in time, associations for the improvement of the various pure breeds of stock came into existence. Encouragement and direction were given by the government, and on the confederation of the provinces in 1867 increased interest was manifested. The first important step forward was made in 1874 when the Agricultural College at Guelph was founded. The Royal Commission on Agriculture in 1881 traversed the province from end to end, investigating conditions and arousing interest, and the publication of their report in five volumes contained a mass of information and made suggestions that have produced an effect lasting to the present day. Following immediately after, and as a direct outcome of the Commission, there was organized the Ontario Bureau of Industries, whose first business it was to collect and publish reports on crops, live stock, and general agricultural conditions. When, in 1888, a department was formed separate from the other executive branches of the government, this Bureau became the nucleus of the department, and to the latter was added gradually the work carried on by the various provincial associations.

**Branches
of the
Department**

As the work along various lines developed and new fields were opened up, it had to be systematized and the department is now organized into nine branches, each in charge of a responsible directing official.

These branches are as follows:

1. Ontario Agricultural College;
2. Ontario Veterinary College;
3. Agricultural and Horticultural Societies;
4. Live Stock Branch;
5. Farmers' and Women's Institutes Branch;
6. Dairy Branch;
7. Fruit Branch;
8. Colonization Branch;
9. Statistics and Publications Branch.

In addition to the above, there is work of various kinds which is still in the formative and growing condition, but in time it will, no doubt, be organized into separate branches with an official in charge of each. Farm forestry and district or departmental representative work may be particularly mentioned. As showing the expansion of the work, it may here be mentioned that in 1890 the total expenditure under agriculture and immigration was \$177,014.00, and in 1910 it had increased to \$748,169. These do not include expenditures on capital account. Deducting revenue, the net expenditures were \$156,136 in 1890 and \$634,712 in 1910.

**A Work
of
Education** The work of a provincial Department of Agriculture is educational. The foregoing list of branches shows a great variety in the energies and expenditures. An acquaintance with the geological and geographical conditions of Ontario and a knowledge of the composite nature of the people of the province will show how varied are the agricultural lines of work and why it has been found necessary to develop a department with many branches. There are lines of work not suggested by the division above given but which are included. Thus, under the Horticultural Branch, city and town improvement societies and vegetable growing are taken care of, and apiculture and entomology are a part of the Fruit Branch. Poultry work comes in under Live Stock. We have in Ontario soils and climates in great variety, and we also have a farming community of a complex nature. The original settlers were of varied origin. England, Scotland, and Ireland contributed extensively. French-Canadian settlements are to be found in the east, southwest and in the newer districts of the north. German settlers are to be found in large numbers in a half

dozen counties of the middle west. Further, it is to be noted that Ontario, through favourable natural conditions, has become a great manufacturing province. Agriculture, as a consequence, is an interesting problem.

A Stationary Rural Population The rural population of Ontario, in 1909, stood exactly at the same figure that it did in 1872, viz., 1,050,000. In the latter year, however, the total town and city population was just about what Toronto holds to-day, 375,000. The urban population is now over one and a quarter million. During these years, in addition to this urban increase of nearly 900,000 people, we have had the trek to the great west now entering on its twenty-fifth year. Taking both of these movements into consideration, the wonder is that the agricultural population has stood the strain as well as it has. Looking over such statistics as are available and studying a number of districts personally as I have been able to do during the past few years, I have come to the conclusion that agriculture in Ontario has entered upon an upward movement that is already making itself felt. Rural population showed a steady increase from Confederation in 1867 to 1886, when the Canadian Pacific Railway was opened. From that year the decrease was just as marked down to 1906. Now we are on the up-grade again, though the increase as yet is not very great. In addition, there is a decided increase in the total farm values of the province and the total values of farm products also are showing most encouraging increase year by year.

The Solution: Intensive Farming Intensive agriculture and the production of high grade food are what we are aiming at. Those who have studied the problem are aware that it is not an easy task. Again and again we are advised of what the well-farmed countries of Europe are doing—and it is well to keep this example before our people—but, of course, the conditions are quite different. There, land is dear and labour is cheap; here, land is cheap and labour is dear. It becomes, therefore, an interesting and complicated problem to work out with cheap land and dear labour, plans and methods of work that will result in procuring adequate reward for labour and at the same time conserve our soil resources. As far as Ontario is concerned at the present time and with

our present style of farming, it is not so much a question of conserving our soil as conserving our labour. What we are aiming at is to make the labour now being expended more effective. We have some millions of acres that need draining. If drained, they could be worked more easily and they would produce more abundantly,—hence, a campaign for underdrainage is being carried on. We have a few thousand trees well cared for, productive of good fruit, but we have (I think I am not putting it extravagantly) millions of trees neglected, uncared for, whose production is uncertain and more or less unprofitable. We have been demonstrating in the past few years that in the neglected apple orchards we have one of our greatest assets,—hence, our orchard demonstration campaign. We have over one million milch cows on the farms producing on the average not over 4,000 pounds of milk a year. If 200,000 of the unprofitable animals were exterminated, there would be a saving of labour, a saving of food, and a decided increase in profits,—hence, our dairy campaign. And so we might go on along other lines. The more intelligent use of labour is the key to success in Ontario agriculture.

**How the
Department
Does its
Work**

Now let us see how the Ontario Department of Agriculture is trying to assist in this movement. The Ontario Agricultural College was started in 1874. For many years it led a precarious existence. It had few students and few friends. It did not get a grip upon the agricultural community. To-day and for some years past, it has been full to overflowing. I have seen it with 134 students. For some years, over 1,000 have taken courses of one kind or another. How was this brought about? First, the members of the teaching staff went out from the College to address farmers' meetings and to become personally acquainted with the farmers and their work. Second, the experimental work of the College was extended to several thousand farms through the work of the Experimental Union. Third, farmers have been brought to the College, 40,000 every year, to see for themselves what is being done. In short, the College in isolation was of little use; when, however, College and farm were brought into direct contact, sympathy, support and co-operation followed.

Let me give you another example. Ontario has become a great dairy province, noted for its production of cheese. Ten or twelve

years ago its cheese could be classed as good, bad and indifferent. There were dairy schools, there were dairy associations, there were dairy reports and bulletins. These were necessary and effective as far as they went, but the trouble was they did not go far enough, they did not reach the unprogressive, indifferent cheese maker and milk producer. For some years we have had over thirty trained expert cheese and butter makers going from factory to factory, demonstrating on the spot, giving that help which can be effective only when it is personal and applied at the critical time. What is the result? Those who are in the trade tell us that Ontario cheese and Ontario creamery butter never graded higher than they did in 1910. Moreover, we have been able to enact a law that after January 1st, 1911, no one can have charge of a factory as chief maker unless he holds a certificate of qualification, and every factory is registered. All this is a direct result of taking the best dairy methods right into the factories and gradually we are bringing our instructors right into the dairy barns of the milk producers.

**Reaching
the
Farmer**

It is a natural sequence from this experience that if we are to get all or a majority of our farmers to drain their land, to sow the best seed, to care for their orchards, to test their cows, to raise only profitable stock, and, in brief, to get the best results for the expenditure of labour, we must get into close personal touch with them and give sympathetic direction to their work. And so, in 1907, we were enabled to try out the experiment of personal instruction on a comprehensive scale. A Department of Agriculture located at the capital of the province is necessary for direction. An Agricultural College at some place convenient of access is all right; it must be located somewhere and we must have such an institution for training the men who are to do the teaching and directing. Experimental farms are needed for trying out certain lines of work and for getting results that will be of practical use. But, after many years of experience, we found that these were limited in their usefulness, they alone would never regenerate the great mass of the farmers,—they would help those who wanted to be helped, who were seeking help and who would get help because they appreciated the value of such assistance, but the great majority of the farmers would be moved by none of

these things. The Department of Education also wished to inaugurate some plan of agricultural instruction in rural schools. Through the united efforts of the two departments, we finally decided on the plan of locating graduates of the Agricultural College in various counties as teachers of agriculture and leaders in agricultural improvement. In other words, we established branch offices of our department and moved the Agricultural College nearer to the farmer's home. We made it possible for our representative to go into the farmer's field, his orchard, his dairy, and, what gave him greatest confidence, right into his home. Further, he was a resident, not a transient, and as soon as the formalities of becoming acquainted were over, he won the farmer's confidence by his sincerity and his ability to help.

In 1907, the government started work in six counties; in 1910, fifteen counties were provided with offices, teachers and assistants. So great has been the success and so much appreciated the work that the question now is how to meet the demands from other counties. The men for the work are carefully selected. Their salaries are provided through the Department of Education. The office expenses, salaries of assistants and incidentals are paid through the Department of Agriculture. By statute, the county council is required to make a grant of \$500 each year towards expenses. Each of the men is attached to a high school where he carries on each winter a short course in agriculture varying in length from one month to three months. In time, we hope to have permanent classes established. Up to the present, the great work has been that which has been planned at, and directed from, the central office: short courses in live stock and seed judging, drainage demonstrations, seed fairs, public school competitions in growing small crops, demonstrations through reviving old orchards, fertilizer experiments and the carrying on of improved methods by the farmers themselves on their own farms. Let me again emphasize this last point,—the great hope of improvement in the average farmer lies, not through sending him a report or pamphlet, not through talking at him in an institute meeting, not through doing something for him on an experimental farm, but through helping him to do some work on his own farm wherein he gets improved financial results through his own efforts. This is the secret of success in the work.

The general aim of this work is to bring the best agricultural methods close to the farmer, to get his sympathy, to arouse his interest, to stimulate him to better methods. When a man is selected for a county he is told to study his people, their condition and their needs, and to arrange his work accordingly. He is given a fairly free hand, though, of course, he is in close touch with the Department and all its branches. The first result noticed is the increased interest manifested by the farmers. Probably for the first time they realize that the complicated government organization has been created for a specific purpose and that purpose is to assist the farmer to a better and more prosperous living. Once that feeling is abroad, the application comes easy. And now the whole agricultural organization comes into use. This "man on the spot" brings into his county all those resources of the government departmental organization about which the farmer had some hazy knowledge but whose usefulness he had questioned, and "professors" and "experts" become real men like themselves whose object is not to pose as men of exclusive distinction and drawers of salaries, but men able and willing to give real help. With the farmer, the age of talk has gone by, the day of demonstration is here. We have a thorough organization of the agricultural forces along many lines. Now we are bringing all this to bear upon the farmer's work and the results are coming through the means of direct demonstration. During 1910, we had over one hundred men engaged in various ways, planning drainage systems, teaching how to make cheese and butter, pruning and spraying trees, selecting seeds and supervising growing crops of all kinds, organizing co-operative associations and helping in the marketing of products.

The Results And what is the result? Farmers who were indifferent or opposed to government interference and who criticized the expenditure have become enthusiastic, the attendance at practical demonstrations has increased in an astonishing degree, and there is an awakening along agricultural lines such as we have never known before. There is something in the agricultural air that indicates progress. Intensive agriculture and specializing in production are noticeable, and, where this movement is permanently fixed, there is a decided increase in farm values. The two contributing elements are, first, demonstration

of better methods; and, second, the permanent location of qualified men to inaugurate and direct the movements. The government began this movement in 1907. We now have fifteen counties equipped with representatives. We aim at carrying on the work in every county and district in the province. It costs money of course to do this work,—\$1,200 for salary and about as much more for the office, assistant and running expenses,—but there is no expenditure of public money that produces greater results. The fact is, that it renders so effective all the other expenditures for agricultural purposes. I venture this prediction, that when we have the province of Ontario manned in all counties and districts and fifty representatives with their assistants have got down to work, we can double the output of the farms of Ontario in the next ten years. It is a work worth while spending the money of the people upon, for the whole people will receive the benefit.

County Extension Work

The statements in the preceding paper as to the value of demonstration work are general. With a view to giving further information and showing the varied lines of work possible, the following condensed reports from county representatives, of the work carried on in four counties, are added as contributing valuable information and suggestions.

Dundas County SUMMARY OF WORK.—1. Making the personal acquaintance of as many citizens of my district as possible and the revealing of myself to them that they may have confidence in me.

2. Advisory work from office, personal and by correspondence.
3. Three months' Short Course for boys in Collegiate Institute.
4. Organizing and conducting of 3 day Short Courses (5 Short Courses, 1 Fruit Institute).
5. Organizing of Farmers' Clubs; supervision of these Clubs.
6. Assistance in conducting excursions to places of learning—two to Macdonald College during 1910.
7. Preparatory work leading up to organization of Horticultural Societies.

8. The interesting of Agricultural Societies and farmers in Standing Field Crop Competitions. (Three were started in 1910).

9. Distribution to good farmers of seed grain from prize winning fields in Field Crop Competition in 1909.

10. Demonstrations (three) in spraying of mustard.

11. Making of drainage surveys for farmers. Drainage demonstrations.

12. Demonstration of value of underdrainage by draining of low-lying portion of school grounds, 6 acres.

RESULTS.—

1. Land ready for seeding and was sown 3 to 4 weeks earlier than other low-lying land of vicinity.

2. Oats and barley ripened 3 to 4 weeks earlier than other fields of same crops. Yields large.

3. Large crops of sugar beets and mangolds,—30 to 51 tons per acre according to variety, on what was before a useless swamp.

4. Large crops of potatoes, yield varying from 340 to 591 bushels per acre according to variety.

13. Conducting of demonstration plots on school grounds. Plots 3 acres in extent.

Points demonstrated in 1910:

1. That large crops could be grown after underdraining on what was before wet land. Whole scheme a demonstration of value of underdrainage.

2. Experiments in dates of seeding on (1) drained land, (2) undrained land.

3. Experiment on rates of seeding.

4. Different methods of sowing alfalfa.

5. Growing of alfalfa on low drained land. Will require 2 or more years yet to complete demonstrations.

6. Test of twelve different varieties of oats to show yield, date of maturity, strength of straw, freedom from rust, and to give farmers an opportunity of seeing different varieties grown under the same conditions.

7. Test of twenty varieties of corn to give farmers an opportunity of seeing nature of variety, amount of fodder, yield of grain, date of maturity, etc.

8. Test of mangolds, carrots, turnips,—a special effort to grow large crops of roots in order to interest dairy farmers in growing such crops.
9. Value of uncommon crops as rape, kale, field cabbage. Test of same. Millets, variety tests.
10. Test of 20 varieties of potatoes—yield of from 340 to 351 bushels per acre obtained with late varieties.
11. Sale at market prices of 100 bushels of above potatoes for seed purposes.
12. Experiments with insecticides and fungicides.
14. Conducting of fertilizer experiments on three different farms.
15. Conducting of stock judging competition for boys at fall fairs, four in all.
16. Exhibit at County Fair, Morrisburg.
Insects, plant diseases, weeds, products of sprayed and unsprayed orchards, spraying materials, apparatus, etc., produce of Demonstration Plots, distribution of bulletins, etc.
17. In 1909, during Fair, actual drainage work going on. Taking of levels, grading, etc., demonstrated.
18. Demonstration of good orchard culture by personal (assistant and myself) care of four orchards; constant supervision and direction of care of another.

RESULTS.—

Orchard No. 1: Marked difference in yield and quantity of fruit on sprayed and unsprayed part.

Area,—1 1-3 acres; 43 trees.

Total yield, 143 bbls.

Unsprayed part,—1 row of trees through centre of orchard—total yield of those 5 trees, 7 bbls.; less than 1 bbl. of No. 1 apples.

Net returns to owner, \$400, (apples sold on trees). Cost of spraying material, \$7.90.

No record kept of cost of pruning or cultivation.

In unsprayed orchards in neighbourhood, apples scarce and of worst quality.

Orchard No. 2: (four miles distant from No. 1.)

14 trees McIntosh, 16 trees Fameuse—\$350 worth of

apples harvested at market price. No check trees kept. Cost of spraying material \$5.69.

In nearby orchard from which 100 bbls. were sold in 1909, less than 10 bbls. were of inferior quality in 1910. In adjoining orchard, apples worthless. (This is the case with all unsprayed McIntosh and Fameuse apples this year). Fruit from this orchard taken by Dominion Department of Agriculture to World's Fair, at Brussels.

Orchard No. 3: (Two miles from orchard No. 1 and orchard No. 2).

No records kept, but fruit on sprayed trees 15 in number, first-class. One unsprayed tree had not an apple although there was plenty of blossoms and the fruit set well all through this section in 1910.

Orchard No. 4: Fruit clean.

In the above four orchards work was done by my assistant or by myself.

Orchard No. 5: (Located 8 miles from other nearest demonstration orchard).

Pruning, care and spraying done under our direction. Area was 3 acres, McIntosh.

An orchard which seldom before grew marketable fruit.

Fruit sold on trees for \$350, and graded nearly all firsts and seconds. Three check trees—fruit useless. In unsprayed orchards of neighbourhood, fruit useless.

Lanark County

Lanark county exports no grain; it is not as yet a fruit county and its climate and soil do not lend themselves to the production of special crops. It is primarily a grazing county and the principal industry is thus largely under the supervision of the Dairy Instructor. Consequently, it is not easy to show big results in any one line through the work of this office. With the stimulation of production, the elimination of waste and the promotion of agricultural interests in general as our governing policy, we have, however, endeavoured to make the most of our opportunities and steadily to increase the sphere of influence of the office.

In this report no attempt is made to touch upon the work of the office as an information bureau. This has been pretty well covered in a previous report and it is sufficient to say that the number and variety of questions handled has greatly increased with each season, as has also the area represented by those making use of the office. Neither have I referred to the school work nor to meetings addressed within the county and at outside points.

During the fall of 1909, we added three new Farmer's Clubs to our list—Ramsay Township, Carleton Place and Pakenham. These Clubs all held meetings every three or four weeks, and in addition to the interest and enthusiasm which they awakened among the farmers themselves, they afforded us additional opportunities for keeping in touch with the more remote parts of the county. Our largest Club, South Lanark, which has had three successful seasons, has been one of our most important mediums in our work locally. While the discussion of farm topics and topics of general interest has constituted one of its most important features, we have, in addition, made use of it in the following ways during the past two seasons:

1. To promote rural telephone service throughout the riding;
2. To carry on co-operative buying of clover and grass seed through local seedsmen in order to secure purity and No. 1 quality;
3. To import seed corn on the ear;
4. To import tile in earload lots;
5. To establish one variety of potatoes as the representative variety for this section;
6. To run an excursion to Macdonald College in August, 1909;
7. To inaugurate an annual ploughing match, October, 1910.

We have now two cow testing associations in the south riding, both doing good work. Since the inauguration of the first one three years ago, we have looked after the secretary's duties in this office.

Certainly nothing undertaken by the Department through us has increased our sphere of influence so materially as the holding of Short Courses, conducted by such men as President Creelman, Prof. G. E. Day, Prof. C. A. Zavitz, Dr. Reed, T. G. Raynor, C. M. McRae and L. H. Newman. Perth, Carleton Place, Almonte and Lanark Village have already been favoured with these, the two latter in the spring of 1910. At the present time, we are organizing one in Smiths Falls. Each event brings us in touch with anywhere from

300 to 800 farmers. The direct benefits have been noted in innumerable ways in subsequent seasons.

In June, 1910, we held four very successful Weed and Seed Meetings at Almonte, Middleville, Macdonalds Corner and Maberly, addressed by Mr. Simpson Rennie.

In Lanark county, we have some 90,000 acres of swamp and slash land, much of which is now being brought under cultivation with the opening up of municipal and award drains. In a great many instances, this muck land has not given satisfactory results after the first few years. For three seasons we have been conducting extensive fertilizer experiments on different types of muck with a view to rendering these areas profitably productive. These experiments have been conducted at different points throughout the county and have been under our direct supervision. On the whole, the results have been most encouraging. As all of our experiments this year are with root crops some of which have not yet been harvested, I am unable to give figures for this year's results. In one case where oats were grown, the yield was increased from 15 bu. to 40 bu. per acre, at a cost of about \$5 per acre. At the same point, the influence carried over from the preceding year made possible an increase of 15 bu. over the unfertilized. Equally good results were obtained last year with millet, rape and mangolds at other points.

During the past season, we have concentrated on underdrainage work. In the county as a whole, and particularly in South Lanark, very little underdrainage had been done previous to 1907, and when we first took up this work, we found four obstacles barring progress in this particular line:

1. A lack of appreciation of the benefits to be derived;
2. Lack of technical knowledge in laying out systems;
3. The absence of tile factories in any part of the county;
4. Lack of experience in digging drains to grade, laying tile, etc., and inability to secure competent labour to do this work.

During the seasons of 1908 and 1909, we overcame the first difficulty to a certain extent in our propaganda work by means of addresses, newspaper articles, demonstrations, etc.

The second difficulty was met by offering our services free of expense in making surveys, laying out systems, preparing plans, etc. During the fall of 1909, some of the systems laid out by us were

partially installed by hand labour. One of these fields made an excellent demonstration field, as it chanced to lie beside a leading road and had previously been deemed impossible to drain satisfactorily. This spring, when adjoining fields lay sodden with water, the drained field was dry and in first-class condition. It was in shape for seeding fully three weeks before neighbouring fields, but was kept for corn. This corn crop, grown where corn had never been grown previously, was conceded to be the best crop within a radius of several miles. Not only was it tall and vigorous, but it was uniform over the entire field and was well matured. Needless to say, we had a great many requests for drainage assistance in that section this year, while the owner of the field himself put in nearly a carload of tile this fall.

The difficulty in obtaining tile in the Perth district was overcome through our local Farmers' Club. By buying co-operatively in carload lots we have been able to lay down tile in Perth at a cheaper price than they can be bought right in the yard at many tile factories.

This year, with another wet, backward May to back us up, we launched another drainage campaign, with the result that since the first of June we have devoted every available day and half day to drainage work in various parts of the county. An opportunity to secure the services of a steam ditcher from the province of Quebec assisted us in overcoming the fourth difficulty, and incidentally gave underdrainage the greatest impetus it has yet received in this district. The owner of the ditcher placed himself in our hands, took only such work as we laid out for him, followed our grades, etc., and stayed with us for two months, digging at the rate of at least 2,000 feet per day and as much as 3,000 when conditions were favourable. Breakages, due to our stony land, prevented us accomplishing as much as we might have in the time, but so delighted were the farmers with the work accomplished that it is probable that next year a ditcher will be owned co-operatively here.

Corn has become one of the staple crops in this county and in many sections over seventy-five per cent. of the farmers have silos. Except where an occasional farmer selects Flint corn for seed, all of the seed corn is imported. Naturally, in bad seasons such as that of 1910, a great many farmers have been badly disappointed in their seed. This we have sought to overcome; first, by promoting buying on the cob; second, by testing samples for all local seedsmen; third, by attempt-

ing to develop a strain of Dent corn adapted to this locality. Buying on the cob has been followed up by the South Lanark Farmers' Club for the past two seasons. Comparing the seed obtained by the members this year with that sold in bulk, the new method was worth a great many dollars to those who took advantage of it. In the spring of 1909 and 1910, we tested seed corn for all local seedsmen as soon as their shipments arrived, and practically all used our reports as their only guarantee. More than one lot which failed to come up to standard was shipped back. In our seed selection work, we started with a strain of corn developed for early maturity in Wisconsin. During the past two seasons, we have grown an acre of this corn on the "ear to the row" plan and have selected each year for early maturity. We have succeeded in maturing first-class seed both years and the crop has excelled everything in its neighbourhood not only in maturity, but also in type. The demand for seed exceeded the supply last year and probably will this year.

Ever since this office was opened, we have been emphasizing the value of alfalfa. This year fully one-fifth of the farmers in the Perth district have a small patch of alfalfa, and while all have not made a success of it, the possibility of growing it here successfully has been amply demonstrated. In the spring of the year, alfalfa enquiries greatly exceed all others received. Last year we forwarded upwards of fifty applications for nitro culture and directed the forwarding of many others. We have been experimenting with the crop ourselves and have succeeded in growing it without a nurse crop.

Prince
Edward
County

The experimental work last summer as well as this summer has consisted in conducting practical experiments on various farms throughout the county. Experiments with fertilizers on tomatoes, sweet corn and potatoes were conducted a year ago. This work was taken up more extensively this season. Seven experiments with sweet corn, five with potatoes and twelve with tomatoes, were carried on in different parts of the county. Farmers growing these crops, and particularly canning crops, are unable to obtain sufficient manure and are required to purchase commercial fertilizers. Up to the present time, they have been buying mostly ready mixed and cheap fertilizers. We arranged, that these experiments should be made by the most careful farmers,

who are expected to report to us and also to the Farmers' Club meetings in the winter. In most cases they have cared for the plots and kept accurate records. Wherever possible, the experiments were conducted near the road and attracted much attention. The amount of commercial fertilizers used will be greatly increased another year.

Tests were conducted with varieties of corn on twenty-four different farms, in some cases sweet corn, others Flint and others Dent. Tests were made with Common Mandscheuri and O. A. C. No. 21 barley on fourteen different farms. The barley was distributed to students who had taken the Short Course last winter, and there are already many enquiries as to where to obtain seed of these varieties for next season. Two varieties of peas were distributed, some of the seed having been obtained from the Winter Fair and from the prize-winning lots in the Field Crop Competition.

Quite a number of farmers have been conducting experiments in connection with the Farmers' Clubs, the Club assigning a certain experiment to each of several members. In some sections they have been testing fertilizers. For instance, at Wellington, one farmer has treated an acre of tomatoes with 100 lbs. of muriate of potash and 300 lbs. of acid phosphate. On an acre directly alongside and treated alike, he added 100 lbs. of sodium nitrate, on the rest of the field no fertilizer was applied. He has kept an accurate record of the work and found that he can profitably use the fertilizer and will do so to a larger extent another year. Other farmers in the same section are experimenting with fertilizers on potatoes, strawberries, tomatoes and celery. One of our experiments this season was with fertilizers for celery on muck soil.

Experimental or demonstration plots were conducted in connection with the Collegiate Institute. In addition, variety tests were made of mangolds, tomatoes, millets and corn, also fertilizer tests with potatoes. We had a breeding block of sweet corn, known as Pearce's Improved Evergreen, a variety which originated in this county and which is sought after by the canning factories. We obtained some seed from Mr. Pearce and made some selections from the block grown this year. The main point considered in selecting was to obtain ears with deeper kernels, thus giving a larger proportion of

corn. We expect to carry this work further another year and to get the managers of the different factories interested.

The fruit growers of the county have been very much interested in spraying. The diseases and pests affecting the trees and fruit are so many that they realize it is impossible to produce fruit of superior quality otherwise. There are about two hundred fruit growers in the county who sprayed during the past season. We did not conduct spraying demonstrations on our own account, but kept busy visiting those who were spraying, and endeavoured to get them to do the work as nearly right as possible.

In 1909, tests were made with four brands of lime-sulphur, viz., Vanco, Rex, Niagara and Grasselli brands. No difference in the value of these materials was noticeable. We also tried using an excess of lime in Bordeaux mixture. Although the mixture was more difficult to apply, it seemed to be very effective in destroying the Oyster Shell Scale.

In the spring of 1910, we tested the comparative value of arsenite of lime and arsenate of lead when used as an insecticide along with lime-sulphur as a summer spray. The former was most effective in controlling the Codling Moth, but when applied in greater quantity than recommended resulted in severe burning of the foliage. In spite of the latter, the fruit growers here prefer to use it on account of the cheapness of preparation.

This year the orchards which have been sprayed and cared for have an abundance of first-class fruit. Preparations are being made already for next year's work and much of the material is already ordered.

Mr. Whitford Collier of East Lake has an orchard of twenty acres, consisting of Baldwins, Cranberry Pippin, Spies, Bottle Greening, and Ben Davis. This spring he purchased a complete spraying outfit and four barrels of lime-sulphur mixture. He claims that the spray was worth \$400 to him this season.

There is another very good object lesson in another locality, at Albury. Mr. Wm. Peck owns an old orchard of about 7 acres. A year ago this orchard was very seriously affected with Leaf Blister Mite and the fruit was ruined by Codling Moth. This year the orchard was sprayed thoroughly and sold for \$1,500, while a year ago, when there were more apples, it brought the owner less than \$400.

The Leaf Blister Mite and the Oyster Shell Scale are possibly the worst enemies of the fruit grower in this county. The lime-sulphur mixture seems to control these almost entirely. The concentrated material is very expensive, costing approximately \$13 per barrrel laid down in Picton. Through the introduction of the home-boiled lime-sulphur, the farmers are more apt to take hold of the spraying. It is much cheaper, as it can be prepared at less than one-third the cost of the commercial.

We visited fourteen different sections of the county last spring and gave demonstrations in the preparation of the home-boiled concentrated lime-sulphur. During the past season this spray gave fully as good, and some claim better, results than the commercial article. In one section where a demonstration was given, they boiled 15 barrels and have already ordered three times the material for next year. At Wellington, they purchased 3,500 lbs. sulphur, 1,750 lbs. lime, making 35 bbls. of concentrated solution at a cost of less than \$1.50 per bbl.

A Short Course in stock and seed judging was held in Ameliasburgh on March 14, 15 and 16, at which it was estimated that 1,200 farmers attended. Discussions were held and demonstrations given regarding light and heavy horses, dairy and beef cattle, swine, and farm crops, viz., wheat, oats, barley, corn, hay, pasture and fodder crops.

The Fruit Institute held in Picton on December 14, 15 and 16 was well attended, there being an attendance of upwards of 400 at one of the sessions. Special emphasis was placed on fruit production and the planting, cultivating and spraying of the orchard. Demonstrations were given to show the best methods of packing apples and the preparation of spray materials, particularly the lime-sulphur wash.

All the fall fairs in the county have been attended, viz., Picton, Roblin's Mills and Demorestville. Judging demonstrations were conducted at Picton and Roblin's Mills Fairs for young men, as well as weed and weed seed naming contests and apple naming contests.

Educational exhibits were shown at Picton and Roblin's Mills in 1909 and also in 1910. The exhibit consisted of weeds and weed seeds, insects and diseases of fruits and crops, the results of the experiments conducted. I distributed literature of the Department of Agriculture, and acted in the capacity of judge at two fairs each season.

Judging demonstrations were held at North Port, Hillier, South Bay, Bethel, Crofton and Milford. Horses and dairy cattle were judged and discussed. The average attendance at each place being 45. In most cases evening meetings were held.

Two seed meetings were held in June, 1909, at Hillier and Northport, attendance 45 and 50 respectively. In 1910, special seed meetings were held at Cherry Valley, Milford and Mountain View, with an average attendance of 55.

I have attended all the Farmers' Institute meetings, Agricultural Society meetings, Farmers' Club meetings, and cheese meetings held in the county. There are 13 organized Farmers' Clubs in the county. I attended a large number of the meetings of each Club and took part in the discussions. One of the Clubs in the county developed into a Fruit Growers' Association. It purchased all the spraying materials and supplies for the members during the past season, and is making preparations for packing and marketing their crop next year. There are but sixteen members in this Association, but I think it will grow rapidly. We spent a good deal of time with the members during the spraying season, assisting them in the preparation and application of spray materials, and testing the mixtures and pumps. Each member of this Association speaks in the highest terms of the results obtained from spraying. In Wellington district, there are few fruit growers who will not be spraying another year.

I attended the annual meetings of the cheese factories at Bloomfield, Wellington, Allisonville, Hillier, Consecon, Ameliasburgh, Rednersville, Quinte, Massassaga and Mountain View factories, and was also present at the meeting of the Cheese Board of Trade.

During the last school year, we conducted two classes in agriculture in the Collegiate Institute. In the Long Course were six pupils, while in the six weeks or Short Course there were thirty registered. The coming year we are planning to extend the Short Course to ten weeks and we have every reason to believe the attendance will be greater.

We endeavoured to encourage the rural schools to give attention to school gardens. The Mountain Views school had a very good garden and the people of that section have taken a deep interest in the work. The teacher, Mr. J. M. Root, came to us for advice, and

afterwards carried out the suggestions given. The garden contained plots for each class of corn, oats, barley, goose wheat, millets, roots, vegetables and flowers. It was maintained in first-class shape and created much interest. Indeed, several other teachers have expressed their intention of taking up this work another year.

Dr. Morley Currie, M.P., donated \$50 for prizes for the best essay and collection of weeds from each township in the county, the plans and conditions of the contest being made out by us. Five of the seven townships of the county had entries, and the competition succeeded in interesting a large number of young men in a study of farm weeds. A number of teachers also became interested in the contest. Two of the contestants and winners of this competition told me that they had decided to attend the agricultural course at the beginning of the year.

Underdrainage has been practised but little in this county. Interest was created as a result of a drainage survey on a farm near Picton, and discussion at a demonstration held on the same farm in July, 1909. I have knowledge of 12,000 tiles being laid as a result. This year there were more calls for drainage surveys and plans than we could attend to. Twenty-four applications, averaging 100 acres, have been received, and of these thirteen have been completed. Considerably more drainage would be done, but labour cannot be obtained. We made surveys and plans only where the farmers were prepared to go ahead with the work. A ditching machine will likely be purchased before spring, and from present indications there will be many more calls another year. I cannot cite any outstanding instance where underdrainage has been a benefit, as the work has been so recently undertaken. Last fall we took levels for a main drain across three farms; the drain was completed late last year, and the farmers had this year more than double the crop they ever had on the same land.

I have assisted in making plans for farm barns, and particularly in laying out stables, planning for ventilation, and the construction of silos.

Waterloo County **FARMERS' CLUBS:** We have about twelve Clubs in operation in the county, meeting once or twice a month during the winter, with some continuing during the whole year. These meetings are of an educational nature and are

addressed by the members themselves with an occasional outside speaker on the programme. The Club affords opportunities for public speaking, for acquiring the benefit of the experience of other farmers in the community, it acts as a social centre for the district, neighbours become better acquainted, and in many ways proves very beneficial. Different schemes have been initiated in various Clubs. One has been instrumental in getting a rural telephone system among the farmers and in starting a continuation class in the village school. Another has revived the ploughing match and instituted an annual neighbourhood banquet. Others have various co-operative schemes. Each Club is working out plans for the betterment of its members. Of course, I attend as many meetings as possible, and as they are all held in the evening and are in different parts of the county, at times it means considerable travelling at night. In view of this, it is impossible for me to attend all. However, each Club Secretary sends me a full report of each meeting, together with copies of some of the papers read and a synopsis of the discussions. Consequently, I keep in close touch with all the clubs over the county. I have used some of these reports and papers for full page accounts of the various meetings in our local weekly papers, copies of which were sent to the members of all the Clubs. We are holding a conference of the officers of these Clubs in the near future in order that ideas may be exchanged, and preparation is being made for the organization of more Clubs.

SHORT COURSES: These courses have been of two or three days' duration and were for the purpose of a practical study of live stock and seeds. I have been favoured with the services of the professors of the Ontario Agricultural College for this work. These courses have been held at Ayr, Galt and Elmira. The average attendance at each has been between 300 and 400 farmers. We have used the best stock obtainable and have had as teachers the highest authorities, so that these courses are easily recognized as of immense value in advancing agricultural education at home. And just here is an excellent example of the value of the Farmers' Clubs. In the necessary preparation work for these courses, such as obtaining stock, buildings, advertising, etc., the organized Clubs have been the main feature and, in a large measure, to their efforts the success obtained has been due.

DEMONSTRATIONS: Practical demonstrations in caring for

orchards have been held. Parts of orchards in various sections of the county were sprayed and results noted by the owners. At some of these sprayings, the men of the neighbourhood were invited to be present and explanations were given as to the methods and reasons for the different sprayings. At some of these orchard meetings the subject of farm weeds was also discussed, the actual weeds of the district from the fields being used for illustration purposes.

EXPERIMENTS WITH COMMERCIAL FERTILIZERS: We have had about thirty experiments on farms in different parts of the county in order to determine the value of the fertilizers for certain purposes. These experiments consisted of applying the different fertilizers in various combinations and with various crops both on muck soils and on typical fields of the farm. The material has been prepared for the experimenter and directions given, so that we have had very little difficulty in getting good results from the men who have co-operated with us in this work. All of these experiments were visited some time during the season.

RURAL SCHOOLS: During the last two years, we have had three of the rural schools near Galt unite in a competition in growing farm crops and in making nature collections. This year, we have had six of the schools near Ayr doing the same work. The results were exhibited at what we called a Rural School Fall Fair. From an educational standpoint, I believe some of the best activities of young boys and girls on the farm have resulted from this work. As far as possible, the pupils' plots at their homes were visited during the summer. In driving about the county I sometimes take the opportunity of visiting the rural schools and of addressing the pupils. I have also helped some of the teachers in connection with their school gardens and nature study.

FARMERS' INSTITUTES: Each year I have been on the programme of all the Institute meetings in both the north and the south ridings. During the winter practically one month was spent at these meetings. We have induced many pupils each year to visit the Agricultural College at the time of the annual Institute excursion.

AGRICULTURAL SOCIETY: This society has given me large latitude in connection with certain features of the fall fair, and particularly in the pupils' department. This department is now exceptional-

ly educative not only for the boys and girls exhibiting but for the public as well.

In connection with the fall fairs we have had educational exhibits of our own, such as would be helpful to farmers seeking information. We have also held successful stock judging competitions for boys in connection with the fair. Our experimental plots were in the fair grounds. I have, in addition, had the opportunity of delivering addresses at the seed fairs of the agricultural society.

Besides the above, much detailed work of a more general nature has been done, such as the preparation of addresses for meetings, articles for the press, assisting the different Farmers' Clubs in their various activities, aiding the Women's Institutes, Horticultural Societies, Poultry Associations, etc. The office is used as the board-room for these societies. I have addressed the Teachers' County Convention, acted as judge in the Standing Field Crops Competition, and have endeavoured to be of assistance to all organizations connected with the rural communities. Mention should also be made of the individual assistance given to numerous farmers, both in the office and in my trips through the county.

EXPENDITURE OF THE ONTARIO DEPARTMENT OF AGRICULTURE FOR THE YEAR 1910

CIVIL GOVERNMENT (Agriculture):

Salaries.. . . .	\$ 23,187.50
Contingencies.. . . .	2,625.30
Total.. . . .	\$25,812.80

AGRICULTURAL COLLEGE AND MACDONALD INSTITUTE:

College salaries.. . . .	\$ 70,408.30
College expenses.. . . .	61,328.05
Institute salaries.. . . .	18,600.10
Institute expenses.. . . .	16,588.11
Farm department.. . . .	17,413.56
Field experiments.. . . .	12,150.22
Dairy department.. . . .	11,210.85
Dairy School.. . . .	7,101.52
Forestry department.. . . .	1,434.29

AGRICULTURAL WORK IN ONTARIO

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Poultry department.. . . .	5,010.83
Horticultural department	9,532.40
Soil Physics department.. . . .	3,999.27
Mechanics department.. . . .	1,041.39
Agricultural department.. . . .	749.96

Total.. . . . \$236,568.85

VETERINARY COLLEGE:

Salaries.. . . .	\$ 18,424.45
Expenses.. . . .	13,554.43

Total.. . . . \$31,978.88

AGRICULTURAL AND HORTICULTURAL SOCIETIES:

Salaries.. . . .	\$ 5,190.00
Contingencies.. . . .	1,931.79
Pure seed fairs.. . . .	380.70
Spring stock shows.. . . .	3,174.05
Grants to agricultural societies.. . . .	83,606.00
Field crop competitions.. . . .	6,986.61
Expert judges.. . . .	9,881.92
Grants to horticultural societies.. . . .	9,996.00
Ontario Vegetable Growers' Association.. . . .	800.00
Miscellaneous.. . . .	774.24

Total.. . . . \$122,721.31

LIVE STOCK BRANCH:

Salaries.. . . .	\$ 6,262.50
Contingencies.. . . .	1,240.29
Winter Fair, Guelph.. . . .	9,500.00
Winter Fair, Ottawa.. . . .	7,500.00
Horse shows, grants.. . . .	2,475.00
Local poultry associations, grants.. . . .	2,024.93
Miscellaneous.. . . .	2,767.38

Total.. . . . \$31,770.10

INSTITUTES BRANCH:

Salaries.. . . .	\$ 4,126.67
Contingencies.. . . .	4,166.39
Grants, services and expenses of lecturers.. . . .	26,449.19

Total.. . . . \$ 34,742.25

DAIRY BRANCH: (Under charge of Institutes Superintendent).

Eastern Dairy School.. . . .	\$ 12,053.17
Grants to Dairy Associations	4,500.00
Instruction and inspection.. . . .	39,065.24
Miscellaneous.. . . .	2,177.17

Total.. . . . \$57,795.58

COMMISSION OF CONSERVATION

FRUIT BRANCH:

Salaries..	\$ 3,140.00
Grants to associations..	3,850.00
Orchard spraying..	4,170.08
Fruit exhibitions..	4,500.42
Fruit Experiment Stations..	14,348.29
Orchard inspections..	3,775.17
Bee Keepers' Association, grant	450.00
Inspection of apiaries..	2,554.43
Entomological Society, grant..	1,000.00
Orchard surveys..	2,652.05
Contingencies..	1,399.39
Total..	<u>\$41,839.83</u>

FARM FORESTRY:

Purchase of waste land..	\$ 2,805.00
Wages..	3,877.15
Miscellaneous..	3,284.18
Total..	<u>\$ 9,966.33</u>

DISTRICT REPRESENTATIVES AND TEACHERS OF AGRICULTURE:

Salaries (paid by Dept. of Education)..	\$ 16,800.00
Services of Assistants and expenses (paid by Dept. of Agriculture)..	20,792.19
Total..	<u>\$37,592.19</u>

STATISTICS BRANCH:

Services and expenses..	\$ 3,763.90
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MISCELLANEOUS:

Reports and bulletins..	\$14,943.94
Milk Commission..	1,618.20
Corn Crowers' Association, grant..	500.00
Experimental Union, grant..	2,750.00
Demonstration Farm, N. Ontario..	7,317.44
Other expenditures..	2,266.17
Total..	<u>\$ 29,395.75</u>

COLONIZATION BRANCH:

Salaries (Toronto)..	\$ 5,757.67
Contingencies..	3,267.32
Work in Great Britain..	29,650.14
Pamphlets, advertising, etc..	18,094.91

AGRICULTURAL WORK IN ONTARIO

49

Grants, bonuses and advances	25,923.25
Miscellaneous.. . . .	1,528.27
Total.. . . .	<u>\$84,221.56</u>
Grand Total, 1910.. . . .	748,169.33
Revenue.. . . .	113,457.09
Net Expenditure.. . . .	<u>\$634,712.24</u>

APPROPRIATIONS FOR 1911

Civil Government.. . . .	\$41,850
Agricultural College.. . . .	259,041
Veterinary College.. . . .	32,488
Agricultural Societies Branch.. . . .	125,505
Live Stock Branch	44,720
Institutes Branch.. . . .	39,583
Dairy Branch.. . . .	62,750
Fruit Branch.. . . .	50,020
Farm Forestry.. . . .	10,000
District Representatives.. . . .	27,600
(Salaries additional.. . . .)	\$22,800)
Statistics Branch.. . . .	5,500
Immigration Branch.. . . .	100,600
Demonstration Farm.. . . .	8,000
Miscellaneous.. . . .	30,250
Total.. . . .	<u>\$837,907</u>
Expenditure on capital account.. . . .	70,732

DR. C. A. HODGETTS, Medical Adviser to the Public Health Committee of the Commission of Conservation, then gave the following address, which was illustrated by lantern slides:

UNSANITARY HOUSING

BY CHAS. A. HODGETTS, M.D., L.R.C.P. LOND., ETC.

*Medical Adviser to the Public Health Committee
of the Commission of Conservation*

The housing question has been more particularly and prominently brought to the attention of Canadians by Mr. Henry Vivian, M.P., through the kindly auspices of His Excellency Earl Grey to whom Canadians must feel deeply grateful for this practical expression of his personal interest in all things that appertain to the social and national welfare of our country.

The evils of improper housing and the deleterious effect of their continuance upon the individual, both as affecting his health and his morals, are now generally acknowledged; but that we should be able to say that considerable of what has been written and much that has been said in respect to unsanitary housing conditions in Europe can be applied to Canada, comes perhaps as a surprise to many who have considered that in this fair land of ours, it was impossible for such evils to grow up. It is quite true the evil does exist, and perhaps to a greater extent than we are free to admit; not to such an alarming extent perhaps as elsewhere, but none the less it is an evil which, if we but look for, may be found even beyond the boundaries of our larger centres of population—for the nucleus of many a slum has been planted even in the outskirts of civilization and it will be found that, even there, some of the more serious effects upon the health and morals of the dwellers are already apparent.

Existing	The following brief extracts from the writings of three
Conditions	well known public officials indicate the conditions exist-
in Canada	ing in at least three sections of the Dominion.

Regarding the province of Quebec, Dr. Elzear Pelletier, Secretary of the Quebec Board of Health, in an excellent article on "Our Unhealthy Dwellings," says:

"As the populations of our cities increase, the dwellings are huddled together, without any care being given to their orientation in order to secure sunshine and light for the apartments, and without reserving enough free space to allow the air to circulate around the dwellings. The height of the buildings constructed is out of proportion to the width of the streets, which will look, in time, like mere lanes. Wings are built precisely in the places where they will intercept the sun-rays most directly. Some so-called improved dwellings are constructed in which the half of the rooms are lighted from closed yards, which consequently contain only stagnant air. Moreover, some of these yards are only wells, styled light-wells, but where the sun can never penetrate. Rooms are made without any window whatever. And lastly, dwellings, healthy until now, are transformed into absolutely unhealthy dwellings, and tenants are always found for them.....

"The public authorities should boldly undertake the fight against the cupidity of the real estate owners. They should not, indeed, hesitate. 'Let no one,' writes Chessyon, 'speak of the violation of the right of ownership. If ownership has rights, it also has duties, and the respect for the interests of the proprietor cannot go so far as to deliver up to him, without control and counter-weight, the life of the families he lodges in his property. If, indeed, ownership is one of the foundations of society, public health is another of them, and it has also a right to consideration.'"

Referring to slum conditions in Ontario, J. J. Kelso, Superintendent of the Department of Neglected Children, speaks as follows:

"These slums are exceedingly dangerous to the health and morals of a city because they are, to the great majority of the people, unknown and unexplored retreats. If leading citizens had to visit these places frequently, the dilapidation, stench, and general misery of mothers and children would so appeal to them as to bring about a quick reform. They are not concerned because they do not comprehend the horrors of the situation.....If there could be a drastic measure passed requiring every house in which human beings dwell to front on a forty or sixty foot street, or else be pulled down, how long would drunkenness, vice and ignorance exist? Not very long, provided there was good municipal government and active Christian effort for social betterment. The slums should be attacked and abolished because they are the great enemy to the home, which is the foundation stone of the State. Bad housing conditions inevitably tend to drunkenness in parents; to delinquency in children; to disorderly conduct; to wife

and family desertion by men who get tired of it all; to immorality in the growing generation owing to the lack of privacy and the consequent loss of modesty; to the spread of typhoid fever, diphtheria, scarlet fever, and the ravages of the great white plague."

The report of Dr. A. J. Douglas, Medical Officer of Health of Winnipeg, contains the following references to overcrowding in that city; the first indicates how overcrowding occurs, and the second shows along what lines work is being done—an example to other cities to go and do likewise:

"Overcrowding notices totalled 1852, an increase over last year, but most of these were not extreme cases, but merely verbal warnings of the Inspector, whose special duty this is, that the number of beds must be reduced; for it requires ceaseless vigilance to keep within bounds the temptation of certain classes to eke out a slender living by taking in boarders, regardless of the size of their rooms or families....

"I think we can honestly say that the improvement noted last year amongst the class referred to has been continued through this year. The total number of buildings remaining closed and placarded, December 31st, 1909, were 145. Many of these have been unoccupied for years and are, in fact, beyond repair. They, however, cause both this department and the Building Inspector much annoyance by being broken into and becoming nuisances."

In the Report of the Registrar General of Ontario for the year 1908, reference is made to the housing question as follows:

"There are also many other lines upon which improvement can be made, such as the housing of the poorer classes, preferably in detached houses or cottages, the preventing of overcrowding, and I would go so far as recommending legislation to prevent, under certain conditions, the erection of the tenement. They are a damnable architectural invention, and their erection should be carefully considered. Space is what we require, so that fresh air and sunlight may be enjoyed by all."

It may very properly be asked, "What is unsanitary housing?" It is that condition of housing which, in itself, is unsanitary and unsafe or in any way unfit for home-making or for habitation, no matter how transitory; that which tends to impair the physical health or morals of the tenant; the conditions of which are damaging to the community. Some of these attributes may be applied to the expensive

apartment house which is little better than a series of packing boxes, a human storage warehouse. Would you therefore have it inferred the modern apartment is a "slum home?" Not a slum but an unhealthy hive, an architectural monstrosity. But these are just the kind of houses that in their decadence make the worst kind of slum homes.

The term slum is in the present instance applied to the homes of two classes of the community, viz., those of the working class who strive to live honestly, and those of the poor who find it difficult to make a living or who do not intend to. The homes of the poor consist mainly of the abandoned hovels to be found here and there—those houses which have seen better days, the property often of well-to-do citizens or corporations, not the property of the poor occupant who has to pay rent of an exorbitant amount, considering the absence, in most cases, of even necessary conveniences and comforts and that "necessary repairs" are a negligible quantity. Indeed, all is dilapidation, decay and desolation. The environment reeks with the odours of successive strata of dirt, household refuse, and domestic slops, while the walls are cracked, and stairways rickety and unsafe, narrow and dark. The houses are often without cellars, are low and damp, being sometimes built flat upon the ground; while darkened rooms, inaccessible to sunlight, add a sombre hue to a condition which can only be summed up as "damnable." Such, in brief, is a description of what, in the aggregate, constitutes in the popular mind in Canada the "slum."

The slum house stands in a similar relationship to the community as the physical degenerate does to society; both alike are to be found in all grades of the community; both are found more frequently amongst the poorer classes. No matter where the slum house is found it is a danger and a menace to the community. Like the bacteria of which we hear so much to-day and of which we will know more in the days to come, the disease producing organism may be of a virulent or non-virulent type and yet be the same. The slum, like the tentacles of the devil fish, receives its prey within its walls, retains and engulfs him "by imperceptible, yet rapid degrees. Its denizens sink into apathy and develop that strange malady of the modern city, the slum disease. This is an infection productive of infections, a contagion which, as it spreads through the slum, creates new slum dwellers as it passes, leaving its victims stricken with inertia, slothfulness, drunkenness, criminality.

".....Let them escape or not, one and all suffer equally in their lack of resistance to disease. Mal-nutrition, bad air, and overcrowding swell the columns which tell of tuberculosis, pneumonia, diphtheria, and every kindred disease. The slum is the great culture medium of civilization, wherein huge cultures of disease are growing, ready when ripe to rise and sweep the city streets."*

Amongst the poorer classes, the slum home finds its pabulum and develops a virulence which is manifest by the great spread of disease, death, degeneracy and crime. While it slumbers long in the districts of the better classes, a day, however, arrives even here where these conditions become manifest. The once fashionable house is divided and subdivided and becomes the residence of poorer and still poorer tenants. Decay and dilapidation make inroads on the house and mark its degeneracy; and the social disease rapidly spreads until the slum district is established.

This is the process of evolution by which slums have come and are coming into existence in different portions of Canada. The sections of the city of Toronto, which in the days of the early colony, when Ontario and Quebec were known as Upper and Lower Canada, contained the homes of the better classes, have to-day, in some instances, degenerated into slums. I presume that similar conditions exist elsewhere.

The unsanitary conditions appertaining to the housing of the working classes are not so apparent as they are amongst the absolutely poor, but we must not flatter ourselves that this important portion of the community are properly housed, for in many instances they are not. This is equally true of the single man as well as of the man with a family. The one boards in a house overcrowded, unventilated and falling to decay; the latter, if he lives in a crowded portion of a city, is forced either to rent an inferior house in a slum locality, or to share a house with one or more of his fellows. Should the married man live in the suburbs, it is perhaps in a shack town, the whole family being crowded into one or two rooms intended to serve as a kitchen annex to the house he hopes to build. His great expectations are slow to materialize and frequently he, or some others of his family, die in the making of a home—victims of unsanitary housing. This is an example of the working man being the victim of land spe-

* Hollis Godfrey, *The Health of the City*.

culators whose sugar coated offers have led him to launch out on a scheme of housing which they knew well it was difficult for him to carry to a successful issue. The man has paid too heavily for his land and finds the cost of building plus the interest and annual payment, a greater burden than he contemplated. It is the lure of the land speculator.

That, in the making of a nation, history repeats itself as regards housing conditions, will be seen from the following interesting extract:

"There has been proceeding for a number of years a change of usage more than a change of actual property. Whole streets and squares of houses formerly occupied by single families and often good-class families, are now occupied as separate dwellings on separate floors. The private house has become a tenement house. There is a common passage and a common staircase, both of which are open to the public, and the passage and staircase act as the ventilating shaft for the foul atmosphere derived from the dwelling-rooms opening on the stair. The history of such a house is a dismal record of degeneration. Year by year the state slowly but surely becomes worse. The house was structurally designed for one family and is now occupied by four or more families. The sanitary conveniences were also designed for one family and now provide for four families. The same must be said of the water supply and washhouse accommodation. There can be no doubt that the ill-ventilation and the difficulty of access to the sanitary conveniences, scullery, wash-house, or dust-bin may indirectly act as causes of ill-health and undesirable habits. Hence it comes about that both house and tenants degenerate.

"Another of the general characteristics of house property in Central London is that the yards in the rear of the houses have, in many cases, been built over. The condition of things constantly to be observed is this: Between two streets running parallel, there existed, when the houses were first built, an open space, subdivided into yards. Thus fresh air was obtainable in the rear as well as in the front of the houses. In the yards were constructed various conveniences for sanitary purposes, washing, refuse collection, etc. Thus the house, as a private house, was equipped. But in addition to the invasion of tenants, to which reference has already been made, there has been an industrial invasion. The yards became covered in or otherwise built over for workshop premises. Even when such buildings are small, they effectually

prevent thorough ventilation on the ground floor. But so extensive have such buildings become in certain cases, that a large portion of the open space originally existing between the street backs has been filled in. The houses thus become, practically speaking, back-to-back houses. Moreover, the immediate proximity of some kinds of workshops to dwelling-houses readily give rise to nuisances of various kinds.”*

It is quite true that the poor we shall have always with us, but that is no excuse that they should be relegated to live in squalor, dirt, darkness, dampness and disease which not only deteriorate them physically, but corrupt and degrade them morally. There is no reason why their habitations should act as the recruiting grounds for our asylums for the idiots and the insane, and for our gaols and prisons—those monuments we erect to our Errors of Civilization.

Housing the Immigrant It is not only, however, in the districts where old and ramshackle houses are to be found that slums exist but they can also be found by the hundreds in those newer acquisitions to our cities and towns commonly known as “shack towns,” those aggregations of wooden-walled, tar-paper covered, tin, tack-studded shacks and sheds which are intended for temporary residences for the newly arrived immigrant but which, in too many instances, become the overcrowded permanent homes of a foreign population,—hot-beds of parasitic and communicable diseases and breeders of vice and iniquity. The immigrant must be housed and in desperation he eagerly seizes upon the best he can find at the price he can pay. If he can find nothing, either he or some speculator runs up a shack in the suburbs, it may be of a city or town. Whether he buys the land and builds the shack or rents it, he pays exorbitant prices for the accommodation he secures. Thus have sprung up our Little Italys, our Little Londons, and our Chinatowns, devoid of the simplest of modern sanitary requirements. This type of slum can well be described in the account given of an Italian colony near Sault Ste. Marie where there had been over thirty cases of typhoid fever:

“This colony is crowded into a lot of miserable shacks, filthy both outside and inside; no cellars, no drainage, closets on the surface of the ground, vile beyond description; water

* Report on the Public Health of Finsbury, 1905.

from shallow wells which were dirty and unfit for use, and most of them located within a few feet of the closets.”*

In Canada, we have been receiving and will continue to receive the people from many of the European countries in increasing numbers. We have in our midst the inhabitants of Asiatic countries, bringing with them their Oriental customs and habits. Each nationality has its peculiar ideas as to how its people should live. They all come with the one object of making a living if not of making money, although some few reach these shores imbued with the one idea—love of money, and in their eagerness to get money, they often live more like swine than human beings. The shrine as well as the Goddess of Hygeia are unhonoured and unknown. This is no myth, for during some years as Public Health Officer in Ontario, I have seen many instances of how some of these people begin a “slum home” in the central part of a city, bring up a family in it and carry on business under conditions which pen can but imperfectly describe.

One example of this may be pertinent, one which came under my own notice some years ago. A newly married couple arrived in one of our cities from a southern European country. The husband for a time peddled plaster casts of antiques. Subsequently, with the development of the fresh fruit trade, he secured a stand on the most prominent business thoroughfare, the site being an alley way to what was formerly a blacksmith’s shop. Here, using the walls of the adjoining stores, the landlord constructed a shack, a lean-to, consisting of space for a fruit stand in front and one room in the rear, which served as kitchen, bed room, living room and, incidentally, as store room for fruit. In this slum home, lived for some years this man and woman. Several children were born there, the greater number died there, and were it not that the site was required for new buildings, the family might have been living there now.

The housing of the immigrant population is a problem which concerns every city, town and district in Canada and must be grappled with right now. It is a phase of the housing question which is little understood and to which little or no attention has been paid. One has only to visit some of the larger cities to witness the evil conditions which now exist and then to ask himself where this will end unless proper measures are at once adopted.

* Annual Report of the Provincial Board of Health of Ontario, 1906.

Consider for a moment the distribution of the immigrant population for the fiscal year ending March 31, 1910, which numbered 104,996. Where and under what conditions has this large number been housed? How many new houses have been erected to meet the wants of the larger portion who, with little money, no knowledge of our language, customs and laws have had to secure housing accommodation? To those who went out to build our great railway lines I will not refer except to say that their housing conditions might be bettered and yet not be called sanitary, or even equal to the conditions under which many a good farmer houses his cattle. They certainly could not compare with the accommodation afforded cattle, in some of the dairy barns in Ontario. The foreign immigrant, while in many instances like the passenger in the overcrowded street car, is at this disadvantage: he is overcrowded all the time, day and night. Both alike pay for accommodation which they don't get, the one to the street car company, the other to the landlord. If these conditions were of a transitory character it would not be so bad, but they have been growing in our midst and unless action is speedily taken to remedy them, the consequences will be alike disastrous to the nation from the standpoint of public health, economics and sociology. That the question is of general interest may be gathered from a glance at the immigration statistics referred to above.

It must not be taken for granted that all of the immigration coming from the United States has for its destination the great West. Each province receives its share of the 103,798 although the division in this class is in favour of the newer and agricultural provinces. Four go to the West to one coming to the East, the figures being: Maritime Provinces, Quebec and Ontario, 23,562; Manitoba, Saskatchewan, Alberta and British Columbia, 80,236.

Dividing the immigrant population into three groups, it is found they were distributed as indicated in the following table:

DISTRIBUTION OF IMMIGRANTS, 1909-10

	Maritime Provs., Quebec and Ontario	Manitoba, Saskatche- wan, Alberta, British Columbia and Yukon
British.	33,711	25,179
Foreign.	28,024	18,082
United States.	23,562	80,236
	85,297	123,497

While not showing the actual number of foreign immigrants that went homesteading in the Western Provinces, the Immigration Report permits of a fairly correct estimate being made. An average of 2.5 persons may be allowed for each homestead. It would appear that nearly all of the number take to the land sooner or later. Certain it is that so far as the housing of the immigrant population is concerned, it is more a rural matter in the west and an urban one in the east.

St. John's ward, Toronto, alone contains about 10,000 foreigners, one-half Jews, one-quarter Italians and one-quarter other foreigners, while the total foreign population of Toronto was estimated in 1907 at 26,500.

In Winnipeg it is estimated that one-quarter to one-third of the population is foreigners.

The foreign population of Montreal is given as follows: Jews 25,000 to 30,000; Italians 80,000 to 100,000; Chinese 1,000; Syrians 800 to 1,000. There is also a considerable number of Greeks and Roumanians.

The following three items refer to Winnipeg's foreign population and indicate overcrowding at this storm centre:*

"M. Simok and M. Selenk endeavoured to ascertain how many adults they could crowd into a given space. Selenk managed to accommodate forty-three occupants in five rooms where only fourteen could hope to find sufficient atmosphere for healthy respiration. Simok ran his neighbour close, having twenty-four in one room where only seven should have been. His rooms were too low, and lacked ventilation. In consideration of the immense profits made by such economic means, Magistrate Daly at this morning's police court, charged Selenk \$15 and costs, and Simok \$10 and costs."

"Stanislau Yablonovish is a teamster. He owns his own team, and his wife goes out cleaning. They own their house and several lots. They live in two rooms, and have five roomers. The furniture consists of three beds, a table, two chairs, a stove and some boxes. The attic is full of pigeons."

"John Klenbyel and wife and six children, and from fifteen to twenty boarders live in four rented rooms. The place is 'beastly' dirty. The boarders bring home kegs of beer nearly every day. Two of the older girls are 'work-

* *Strangers Within our Gates*, James S. Wadsworth.

ing out.' One of them told our visitor the other day that she cannot stay at home; she is happier away."

Of those who go first to Ontario and Quebec, it is feared that but a small percentage subsequently percolate to the farm lands of the West, for if they find employment at once they cannot and certainly do not leave the place where they first settle. Their intentions may have been good in this respect, but, they have been without the necessary financial backing, and soon finding, as they do, that it requires more than 160 acres of land to make a settler, the good intentions leave them and they become what they were before emigrating, urban dwellers. A visit to any of our cities will convince one of this fact. That they are not taking to the rural life in the province of Ontario, at least, is evidenced by the fact that the statement is constantly being made that the farming districts are becoming depopulated, not only because of the migration of the younger men to the Western Provinces, but also for the reason that the towns and cities are attracting them. Do we have much of the settlement of the immigrants on the farms of Ontario?

Referring to the tide of immigration to the United States, Godfrey makes the following statements:

"The incoming human wave which breaks upon our shores sends its scattered spray to many cities. Too little reaches the country. Too much stays in the city slum. It is entirely natural that this should be the case, and that the entering foreigner should seek a dwelling in some locality where his own tongue sounds kindly to his ears. So the Italian, at whatever port he lands, hastens to Little Italy, the Russian seeks Little Russia, and the Hungarian finds lodging in Little Hungary.

"Division of this sort makes housing problems in the United States more complex than those which many European cities show. Model tenements here cannot receive tenants chosen at random in the same fashion as can Berlin or London. Difference of race and type, even difference of locality forbids, for the Italian from the North must have his quarters separated from the Italian of the South, and one tribe from that strange mixture of races called Russia may be the ancient enemy of another. Evidently our attack on this problem must include some selective processes."

How applicable these words are to Canada at the present time! With these facts before us, may not the question be asked:

Are we making proper provision for the housing of our immigrant population, to say nothing of the population by natural increase? Overcrowding and slum conditions with their accompanying evils are present with us. By our neglect, indifference and greed of gain we have allowed to become ingrafted in the fair escutcheon of our Canadian civilization a sore which is a disgrace and a shame. True, it is small as compared with similar conditions in other countries; somewhat insignificant, you may deem it, but it is here and unless grappled with now will prove a much more difficult problem to solve even ten years hence.

One is forced to ask, "Is it right that we should invite and encourage settlers to come to this country when we have not even adequate accommodation to offer them or a more decent temporary residence at a fair rental?" We will not speak of permanent homes. True, it is a nation in the making, but the nation must be properly housed. We have passed the nomadic age of our cities. I can show you housing conditions in Canada, which cannot compare, as regards the comforts and conveniences of life, to those enjoyed by the tent dweller in ages past. Even the Hebrews in their four decades of desert wandering surpassed us in the observance of the essential laws of personal and domestic hygiene.

A fair idea of the housing conditions of the people of Canada in 1901, may be gathered from the Census Report of that year. The density of population as affecting the health of the people can hardly be considered; for the population of some seven or eight millions is scattered over a vast area. The congestion occurs chiefly in the larger centres such as the cities of Montreal, Toronto and Winnipeg. The housing statistics of the two former cities in 1901 were as follows:

	Populat'n	Area in Acres	No of Houses	Families	Houses per Acre	Pop. per House	Pop. per Acre
Montreal. . .	267,730	5,972	49,157	51,759	8.2	5.4	44.8
Toronto. . .	208,040	10,777	39,104	41,001	3.6	5.3	19.3

In the table no allowance is made for streets, squares or parks, or playgrounds. In Montreal, however, in that year the density of

population by wards varied from 8.1 to 111.2 per acre; while in Toronto, on a similar basis, it ranged from 9.0 to 34.9 per acre. The houses per acre ranged from 1.2 to 19.8 in the former city and from 1.85 to 6.05 in the latter. From more recent statistics it would appear that the area of Toronto has been extended to 17,920 acres, the population being estimated at 325,280.* Notwithstanding this material increase in acreage, Toronto, and no doubt Montreal also, compares unfavourably with some of the larger cities of the United States of about the same population. Their areas are as follows:

Buffalo, 26,880 acres; Cincinnati, 27,840 acres; Detroit, 23,040 acres; Indianapolis, 19,840 acres; Minneapolis, 34,080 acres.

For purposes of comparison, the following information in regard to England and Wales may be of interest:

In statistical memoranda presented to the Local Government Board, dated May, 1909, by a committee of its medical officers, the density of population in England and Wales is given as follows: For 1901, 75 urban districts (including London) with a population of 50,000 and over, 25.3 per acre. For 361 districts with a population under 50,000 and over 10,000, it was 5.5. In 686 districts with a population less than 10,000, it was 1.7; and in the rural districts .2 per acre.†

In a paper like this it is impossible to dwell at length upon the subject of density of population or to compare one city with another. Indeed, it is most difficult to do so because municipalities differ in the amount of open spaces and vacant land they possess.

That density of population has an effect, however, upon the health and lives of the people is well established. Mortality is highest in districts towards the centre of a city and lower in the outskirts. The death rate varies at different ages, being more marked in city children under the age of five years. Mere density alone on a given square space is insufficient to produce all the results which are found. The density of houses is a vital factor to take into account. The house itself, its site, its relationship to other houses, and the character of its inmates must all be considered. Density upon a unit area cannot be ignored, but it is the cubical contents with which we must wrestle to ascertain the effect of overcrowding on death and sickness rates. Dr. Newman gives an interesting table of death rates in

* Financial Post. † Public Health and Social Conditions, 1909.

houses or tenements of small sizes. In one-room tenements, the death rate from all causes in 1904 was found to be 40.6 per 1,000; in two-room tenements, 21.9; in three-room tenements, 14.7; while in tenements of four rooms and upwards, it was 7.5; for the whole municipality it was 21.1.* Perhaps the effect of these unsanitary housing conditions are better shown in the table of Infant Mortality for the same municipality (Finsbury). This Table shows a higher death rate among infants living in one-roomed houses, than those living in two-, three- or four-roomed houses.

INFANT MORTALITY RATES FROM ALL AND CERTAIN
CAUSES IN HOUSES OR TENEMENTS OF SEVERAL
SIZES, METROPOLITAN BOROUGH OF
FINSBURY, 1905

Size of Tenement	Census Population, 1901	No. of births	No. of deaths, all causes	Infant mortality per 1,000 births	Diarrhoea, Measles, Whooping Cough, Scarlet Fever, Diphtheria		Prematurity Immaturity	
					No. of deaths	Infant mor. per 1,000 births	No. of infant deaths	Infant mor. per 1,000 births
1 room tenement	14,516	532	117	219	28	53	16	30
2 " "	31,482	1,216	192	157	51	42	32	26
3 " "	21,280	468	66	141	16	34	21	44
4 " "								
and upwards of 4 rooms.....	33,185	464	46	99	9	19	9	19
Institutions and deaths and births traced.	1,000	206	8	39	....	....	....	....
The Borough...	101,463	2,836	429	148	104	37	78	27

"In cities the average dwelling-space of the inhabitants has a closer relationship to their health than any other condition of health which is capable of statistical expression. Hence I have dwelt at some length upon density of population. If we could obtain a classification of a population according to the amount of measured cubic dwelling-space occupied, and the causes of mortality, possibly we might be able

* *Infant Mortality*, G. Newman.

to draw more definite and exact conclusions from the number of persons per 1,000 cubic feet of dwelling-room space than from the number of persons per room, per dwelling, or per house. On the other hand, it has to be considered that it must be healthier to live in two small rooms than in one large room of the same cubic capacity. The former can be used alternately, the latter must be used continuously. The smaller the dwelling the more numerous the uses to which the room or rooms must be put, the most important use from a health point of view being that of sleeping. In a one-room dwelling, even when the breadwinner works away, the parents and children live by day in the same room previously occupied by night for sleeping; the air becomes loaded with the dust of bed-making, and is continuously fouled by respiration, cooking, washing, etc. In winter and between seasons when the window or door is not wide open the day usage unfits it for sleeping, and the night usage unfits it for living. The children are the greatest sufferers in physical condition, and as they grow up, possessing never more than feeble health, they become still more degenerate by corruption of moral fibre. In short, in one room, sleeping, food-storage, cooking, warming, excretion, ablution, clothes-washing, drying, refuse-storage, bathing, living, including reading, writing, working, and recreation, etc., must be carried on, and the continuous and various usages of the room, and the differences of age and sex of the occupants, must lead one to regard the number of rooms in a dwelling of as much importance as the cubic space per head, at any rate when applied to one and two-room dwellings.”*

It is not the purpose of this paper to deal at length with infantile mortality as affected by unsanitary housing, although much could be said thereon. The story is the same wherever you go, in the poor and crowded districts infantile deaths represent on the average, over one-quarter of the total death rate.

“The phthisis death-rate shows a close relationship to density of persons in cubic space, and phthisis appears to stand almost in the same relationship to respiratory-pollution as typhoid fever does to filth-pollution. The respiratory diseases apart from phthisis are also influenced by impurities of the air, and afford some measure of their effects, just as diarrhoeal diseases apart from typhoid fever, are regarded as bearing a relationship to impurities of the soil.”*

* *Public Health and Housing*, John F. J. Sykes, M.D.

What are the housing conditions as regards rooms in Canada? The Census of 1901 shows there were 46,154 one-room houses; 74,715 two-room houses; 97,674 three-room houses. The one-room houses or homes were distributed as follows:

British Columbia, 9,915; Manitoba, 7,524; New Brunswick, 1,479; Nova Scotia, 1,113; Ontario, 8,484; Prince Edward Island, 204; Quebec, 8,556; Territories, 8,879.

It is simply a matter of conjecture what the present housing conditions are, but speaking from observation which is limited to the eastern portion of Canada, I fear there has been no betterment, rather a retrogression.

That marked improvement, as shown by the lowering of the death rate, follows the improvement in the housing conditions of a city, is shown by the vital statistics of Offenbach am Main, which city has done much for the housing of its citizens. In the ten years from 1870 to 1880, the city death rate was 23.6 per thousand. From 1880 to 1890, it was 20.8. From 1890 to 1900, it was 18.5. In 1908, it was 14.1. Every year of the last decade has shown increased activity and every year has seen the death rate a little lower.* In this German city, modern methods of housing and of general improvement in standards of living are saving from nine to ten more lives out of every thousand to-day than were saved thirty years ago.

In Birmingham, England, for instance, 351 infants die out of every one thousand born in the crowded ward of St. Mary's, as against 65 out of every thousand in Bournville, less than four miles distant. These are but two instances out of many others that could be quoted.

Administrative Inefficiency After attention has been directed to some of the unsanitary housing conditions now existing in Canada and their causes, it may properly be asked what are the health authorities doing that such evils should exist? It may be argued that, even under existing laws and by-laws, local medical officers of health might have minimized the unsanitary conditions now existing. Yet this officer is not always to blame, for, as a rule, he has to take his cue from the local board and too often is it found that the members of a board are more ward politicians than sanitarians, and the health officer, being a gen-

* *The Health of the City*, Hollis Godfrey.

eral practitioner having to earn his living in the community for which he acts, often without pay, the net result is that no notice is taken of these matters. Thus it is that the evil starts, and under this sanitary inertia it grows and luxuriates, greatly to the joy of the landlord, be he an individual or a company. It is profitable fun for him but slow death to the unfortunate tenants.

That the evil is marked in the city where there is the well-paid health officer, is still further evidence of indifference and inertia on the part of these guardians of the people's lives. The powers of both the health officer and each member of a local board of health are very considerable in nearly every province in Canada; yet where is the evidence of their activity?

As a rule, our health laws are modelled after those of England and Scotland and they confer considerable powers upon these health officials. Except in one or two provinces the Provincial Board of Health only serves in an advisory capacity, and too often the advice, when given, is not followed.

The failures of public health work in Canada have been due to the Governments not taking more direct control in administration. In Ontario, for instance, the Government assumes the responsibility for the enforcement of factory laws and maintains a staff of inspectors which is yearly increasing in number. The working man and woman are better housed for eight hours a day in the factory than they are for the other sixteen hours in the case of the man, or, than his wife and family are for the twenty-four hours. If the state has a duty with regard to the enforcement of the factory laws, how much greater is that responsibility in the matter of the housing of the working man and his family and all the rest of us who do not come in under this particular class, but who work as hard and who are equally as valuable to the State? But this is not the only anomaly. The education department requires the proper housing of the child in school, but what of its environment the remainder of the day? The school teacher wears out brain and brawn in the attempt to educate the children of slumdom but the good done in four or five hours of school is undone in the slum. Properly house the child, give him the sunlight and air of a clean house, and how much greater will be the progress in his mental education and his physical and moral make-up.

The above are two examples where the State acts. In the former instance it enforces the measures by its own officers; in the latter

it withholds monetary aid unless its regulations are complied with. And why does the state act primarily for the health of the two classes concerned? We have seen how the enforcement of health laws works out when left to the local authorities.

From the standpoint of hygiene it would seem that the cart has gone before the horse in the eight-hour day movement, for the average mechanic working in the modern, up-to-date factory spends his time in a better environment than he does the remaining hours of each twenty-four. Physically, he is better off at the factory than at home. The question of sanitary housing at moderate rents is a question well worthy of his earnest and undivided attention. The provinces can, if they only will, accomplish as much good for the sanitation of the home as they have done for the factory, with much better results, not only to the men, but also to the unfortunate women and children who are compelled by circumstances to spend their days therein.

**Health Laws
Inadequate**

It is somewhat farcical that a state should decline to accept any responsibility, financial or otherwise, to provide the means whereby crime and disease may be minimized, if not prevented, by bettering the housing conditions. Yet that same state will plan and devise the most approved and up-to-date sanitary home for a man after he has become a criminal. It damns him first and then attempts his reclamation after. How much better, wiser and politic it would be to assist in the prevention of his fall; for certainly the criminal of to-day is better housed and fed after incarceration than he is in his own slum home, or for the matter of that, than is the busy, honest artizan or agriculturalist who is carving out in Canada, a home for himself and family.

To bring about a change the preventive measures to be adopted must clearly be of a different character than are now found in our statute books or among the by-laws of our cities and towns, which, so far as securing any practical results are concerned, have, up to the present, proved a negligible quantity.

The laws at present in force in Canada are either provincial laws or regulations, or municipal by-laws. They are, in the main either (a) health measures of the Public Health Act or regulations thereunder; or (b) provisions of the Municipal Code. The former deal mainly with the question under the head of nuisances, and there is but scanty power given to public health officers to pre-

vent nuisances of this or any other kind. Taken as a whole, the present laws do not deal efficiently with the problem nor, except in the cases here noted, do they provide any constructive schemes such as are in force in England and Germany for the exclusion of city and town limits.

Epitome of Canadian Health Laws

The Medical Officer of Health is authorized to inspect lands and buildings with the object of preventing the accumulation of filth, dirt, and rubbish, and has power to adopt the necessary measures for the removal of the same.

Upon complaint of the existence of a nuisance, either to the Medical Officer of Health or to the local Board of Health, it is generally the law that an investigation shall be made by either of the above or by the mayor or reeve; and if a nuisance is found to exist, its removal or abatement is ordered. If default occurs, then the nuisance may be removed by the local authorities, in which case the costs become a charge upon the persons whose act caused the nuisance.

In some cases, the provincial act empowers the Health Officers, or any two of them to enter into or upon any premises in the day time as often as they think necessary. In such cases, the act provides that the members of a local Board of Health are health officers.

It is quite clear the public health acts in so far as they refer to nuisances, take cognizance of the conditions which tend to create slums, for this clause, or a similar one, frequently occurs: "That where the nuisance arises from want of defective construction of any structural conveniences," etc.

In addition to the foregoing health provisions, common to most of the provinces, the following clauses call for special notice as being particularly applicable to slum conditions:

Alberta SEC. 43.—If the nuisance or unhealthy condition arises from some defect in the conformation or construction of the land or building or if the same is unoccupied, the notice prescribed by section 42 shall be given to the proprietor.

British Columbia SEC. 36.—No person shall let, or occupy, or suffer to be occupied, as a dwelling or lodging, any room which

(a) Does not contain at all times at least three hundred and eighty-four cubic feet of air space for each person occupying the same; or

- (b) Has not a window made to open in the manner approved by the Local Board; or
- (c) Has not appurtenant to it the use of a water-closet or earth-closet constructed in accordance with these regulations.

And every room in which a person passes the night, or is found between midnight and five o'clock in the forenoon, shall be deemed to be occupied as a dwelling or lodging within the meaning of this rule.

(12) If the Local Board is satisfied, upon the examination by itself or officer, that a cellar, room, tenement, or building within its jurisdiction, occupied as a dwelling-place, has become, by reason of the number of occupants, want of cleanliness, the existence therein of a contagious or infectious disease or other cause, unfit for such purpose, or that it has become a nuisance or in any way dangerous to the health of the occupants, or of the public, it may issue a notice in writing to such occupants, or any of them, requiring the said premises to be put in proper sanitary condition; or, if it sees fit, may require the occupants to quit the premises within such time as the Board may deem reasonable. If the persons so notified, or any of them, neglect or refuse to comply with the terms of the notice, every person so offending shall be liable to the penalties imposed for infraction of these regulations, and the Board may cause the premises to be properly cleansed at the expense of the owners or occupants, or may remove the occupants forcibly and close up the premises, and the same shall not again be occupied as a dwelling-place until put into proper sanitary condition; or the Board, if it sees fit may, subject to the provisions of section 97 of the "Health Act, 1893," cause such premises to be destroyed, with the consent of two Justices of the Peace.

Manitoba SEC. 54.—Where, under the provisions of this Act, or of any municipal by-law, any officer removes any dirt, filth, refuse, debris or other thing likely to endanger the public health or become or cause a nuisance, or which is or is causing a nuisance, such dirt, filth, refuse or other thing shall be subject to the disposition and order of the officer or officers removing the same, and the owner thereof shall have no claim in respect thereof.

In a publication entitled "General Information Regarding Pub-

lic Health," the provincial Board of Health, in dealing with dwelling houses, says:

"Dwelling houses should never be built upon a wet site. Dryness can be obtained by thorough draining. A wet site is an important factor in the production of many diseases, such as consumption and rheumatism. A dwelling house should never be built upon a lot which was low, but has been filled up with manure and other refuse. Such made up ground simply requires merely the introduction of the germs of infectious diseases to become a hot bed for their propagation. Young children in such houses suffer from cholera infantum during the summer months."

New Brunswick SEC. 16.—The Provincial Board may also by such regulations authorize and require local Boards of Health, in all cases in which diseases of a malignant and fatal character are discovered to exist within any dwelling or outhouse temporarily occupied as a dwelling situated in an unhealthy or crowded locality, or being in a neglected or filthy state, at the proper cost and charge of such local Boards of Health, to compel such inhabitants of house or outhouse temporarily occupied as a dwelling, to remove therefrom, and to place them in sheds or tents or other good shelter, in some more healthy situation and until measures can be taken by and under the direction of the Local Boards of Health for the immediate cleansing, ventilation, purification and disinfection of said dwelling house or outhouse.

Nova Scotia SEC. 25.—When it appears to the local board that any tenement used as a dwelling house is so unfit for that purpose that the public health is endangered thereby, the local board may order in writing that it shall be vacated within a reasonable time, to be therein prescribed, and such order shall be served upon the inmates or left at such dwelling house, and in case of disobedience thereof or of a re-occupation of the dwelling house without a permit, the local board may direct a warrant to the sheriff or a constable or sanitary inspector to enforce compliance with the terms of such order.

SEC. 26.—When it appears to the local board that any house, building, cellar, lot or vacant ground is in a state likely to endanger the public health, the local board shall cause a notice to be given to the owner or the occupant, if any, requiring such owner or

occupant to remove such cause of complaint as in such notice prescribed, and in case of neglect the local board shall cause the same to be removed.

(2). If there is no occupant and the owner or owners do not reside within the jurisdiction of the local board such notice may be given by advertisement in one or more newspapers published within such jurisdiction, if any are there published, or if not, by posting the same publicly.

Ontario 72a.—No person shall keep or store any rags, bones or other refuse in any building used as a dwelling, or upon any premises within the municipality, unless the same are kept or stored in a suitable building, approved of by the Medical Health Officer.

76a.—The Medical Health Officer or any Sanitary Inspector, acting under instructions of the Medical Health Officer of the municipality, may at any time of the day or night, as often as he thinks necessary, enter into a lodging-house, tenement where rooms are rented, or a laundry where the owner or employees reside upon the premises, or other buildings where such officer has reason to suspect that the same are overcrowded or occupied by more persons than is reasonably safe for the health of such occupants. If upon such examination it is found that the premises are occupied by more persons than is reasonable for the health of such occupants, and that the sleeping rooms upon such premises are such that less than 400 cubic feet of air can be provided for each adult occupant of such room or rooms, the same shall be deemed to be overcrowded, and the Health Officer may take such steps as are necessary to remedy the evil. If the rooms, or premises occupied by them are in a filthy or unclean state, or if any matter or thing is there which in the opinion of the Medical Health Officer may endanger the public health or the health of the occupants of such room or rooms, the Medical Health Officer may order the owner or occupant of the premises to remove the inmates therefrom, or to remove that which causes the premises to be filthy or unclean, and thus place the room or rooms in a condition fit for proper human habitation. In case the owner or occupant of any such lodging-house, tenement or laundry neglects or refuses to obey the orders given by the Medical Health Officer within twenty-four hours after such notice, he shall be liable to the penalties of this Act; and such Medical Health Officer or Sanitary Inspector may also

call to his assistance all constables and peace officers and such other persons as he may think fit, and may enter into such lodging-house, tenement or laundry and cleanse the same, and remove the inmates therefrom, and also any matter or thing which causes the premises to be filthy or unclean, and destroy whatever it is necessary to remove or destroy for the preservation of the public health.

SEC. 40.—When a house or other habitation is ascertained to be unhealthy, the municipal sanitary authority may cause the persons inhabiting it to leave it and forbid their return until the same has been rendered healthy in the manner prescribe by law.

Art. 507.—Under the Municipal Code, the Municipal Council has power to authorize the officers of the Council to visit and examine all property, whether moveable or immoveable, as well as the interior or exterior of every house, building or other edifice, to ascertain whether or not the by-laws of the council are carried out; to oblige owners or occupants of such properties, buildings and edifices to receive the officers of the council, and to answer truly all questions which are put to them relative to the carrying out of such municipal by-laws.

Art. 543.—To open, enclose, embellish, improve and maintain, at the costs and charges of the corporation, squares, parks, or public places, of a nature to conduce to the health and well-being of the inhabitants of the municipality.

Saskatchewan The Public Health Act of Saskatchewan very wisely provides that when regulations of the Bureau of Public Health are in force they override and supersede any municipal by-laws; hence the regulations regarding the sanitary provisions to be observed in the control and arrangement of tenement houses, under date of January 29, 1910, are in force in that province. They are in advance of the regulations of some of the other provinces in that they provide that, where a tenement is erected, it shall occupy not more than eighty per cent. of the total area of the lot. But if such building is bounded on three sides by streets or lanes, ninety per cent. may be built on. This is certainly a move in the right direction but does not go far enough. The minimum height of room used as sleeping apartments is placed at 8 feet with provision for a minimum air space

of 500 cubic feet for each occupant. Windows must open to the external air and their area shall not be less than 12 square feet.

Another excellent clause in the Regulations under the Public Health Act is as follows:

Any building or part of any building used as a dwelling-place which, by reason of its condition, either from lack of sufficient accommodation, want of repair, filthy keeping, damp site, faulty drains, or want of sanitary plumbing therein, has, in the judgment of the medical health officer or commissioner, become unfit for human habitation, shall be so declared and placarded as "unsanitary and unfit for habitation."

Such placard shall not be removed without the consent of the medical health officer or the commissioner, and not until such dwelling place has been so altered, cleaned or repaired as shall make it fit for habitation, and to the satisfaction of the above mentioned officials.

Any cellar, basement or part thereof, or any house or building used for human habitation which is found to be damp or moist by reason of soakage through walls, defective water pipes, sewer or drain pipes, cisterns, wells, gutters, rain spouts, or from any cause whatever shall be deemed a nuisance.

In this connection, Dr. M. M. Seymour, Commissioner of Public Health states: "Placarding of the premises has been done, with the result that the changes necessary to render the building sanitary have been duly carried out."

With regard to town planning, the province of British Columbia has in the Municipal Code a provision which has not as yet been adopted in any other province so far as can be ascertained. It is as follows:

British Columbia
Town Planning
Provisions

249. All future surveys into building lots of property within a city, or of property which is contiguous to the boundaries of a city, by owners and others, shall be subject to the approval of the City Engineer and the Mayor when the city has a City Engineer, or the approval of the Mayor when the city has not a City Engineer; and no plan of such survey shall be registered unless it bears a certificate of such approval, but such approval shall not be unreasonably withheld.

250. The City Engineer, where the city has such an official, or the Mayor, where the city has not a City Engineer, may sanction the subdivision of any property already sub-

divided into building lots, and every plan of subdivision of such lots shall be certified by the City Engineer, or by the Mayor when the city has not a City Engineer, as having been approved before registration thereof.

The Municipal Act of Ontario provides that councils of cities and towns and villages may pass by-laws regarding dwellings on narrow streets, as follows:

1. For regulating the erection or occupation of dwellings on narrow streets, lanes or alleys, or in crowded or unsanitary districts, and for preventing in the case of cities of upwards of 100,000 the erection of dwellings, or the alteration of other buildings for such purpose if the same front on a street less than 40 feet in width, unless such street has been duly laid out and accepted by the municipality as a public highway.

An indication of the activity of the health authorities of Winnipeg is contained in the following extract from the report of Dr. A. J. Douglas, Medical Officer of Health,* who, in referring to the new laws, states:

"The Legislature has granted an amendment to the City Charter, conferring upon the City powers to enact by-laws, defining, regulating, governing and controlling all matters connected with the air space, the ventilation, the fire proof character, the sanitation, the size of the rooms, the position of public corridors, the position, number, character of all urinals, lavatories or water closets of ordinary apartment or tenement houses; the portion of any lot to be occupied by such apartment or tenement house, and to do all things and prescribe all rules and regulations necessary from time to time respecting the health and welfare of persons occupying any apartment or tenement house."

"By-law No. 5850, re tenement houses—The by-law, although not quite so comprehensive in its provisions as we would have wished will undoubtedly be of great service in governing the erection of new tenements (to which it mostly refers) and should result in much better sanitary conditions in such buildings."

"The clause relating to the occupation of basements in tenements as dwelling places, should be of service to this Department, as also those parts of the by-law dealing with the convenience or alteration of existing buildings into tenements."

* Annual Report on the Public Health of the City of Winnipeg, 1909.

"The clause prohibiting the erection of wooden tenements exceeding two stories in height is also worthy of note."

In concluding this imperfect and incomplete paper, which is but a preliminary to a more elaborate and detailed one containing a statement of the actual conditions prevailing throughout Canada, attention may be drawn to the fact that, with but few exceptions, health authorities have done little or nothing to prevent the evils at present existing. They have not as a rule exercised the powers they now have, but where they have, it is encouraging to note that good has been accomplished.

In connection with this subject of housing, Dr. Fremantle, Medical Officer of Health of the county of Hertford, recently spoke as follows:

"No sanitary authority can justify its existence, if it is an urban authority at any rate, unless it has definite by-laws in order to prevent the growing up of those defects which are so costly, both to the individual and to the authority, in later years. It is known that on the sanitation of private dwellings, especially of the poorer classes who are less able to look after the repairs of their homes themselves, depends the health of the individual, and, therefore, the health of the nation. It is recognized as a principle in our national life that the housing of the working classes is one of the most important features to which we have to pay attention in domestic legislation, and, as that has been acknowledged, at the present moment we are only extending the principle a step forward as the result of the experience of the past fifty years, which has shown us the great expense both in lives and in sickness, and in money, of the growing up of slums in our great cities. Thinking, therefore, of the origin of those slums, we come to the conclusion that by laying down certain principles, as regards not only the internal economy and the building of houses, but as regards the inter-relation of the different houses to one another, we can prevent, to a large extent, the growing up of those slums in future."

Town Planning

Going a step or two further, I would say no government can justify its existence unless it carefully considers this important question and places upon the statute book a law with ample and adequate regulations for dealing with unsanitary houses of all classes of the community and for conferring power on city, town and village municipalities whereby they may not only control, but in a measure

direct, town and suburb planning. For, in this period of our growth, the village of to-day becomes the city of to-morrow and the suburb of the town is a portion of the city before we are aware of it. The sins of omission of the rural municipal authorities, as well as the sins of commission of the far-seeing real estate speculator, become an asset of a great city. If the urban authorities have been compelled—advice is worthless—to build and plan on proper lines, then the asset is valuable. It is not a case of building and planning extravagantly but wisely and well.

Appended is a brief statement of what is being done in the interests of sanitary housing and town planning in foreign countries and in Great Britain, where, by reason of the local conditions, the evils of the past have been brought prominently to the notice of the public and the authorities.

Germany The outline plan of campaign in Germany may be given thus:

- (a) Town planning.
- (b) The construction of model tenements.
- (c) The encouragement of private builders and of co-operative building societies.
- (d) The demolition of slums, either by the destruction of old tenements and their replacement by new model ones, or by business offices and parks.
- (e) The repair of existing dwellings so as to make them sanitary.

At the same time, the German cities are trying to sift out their dwellings from the chaotic mass of shops, factories, hovels, mansions, and barracks, and send them to the suburbs, thus leaving the industrial buildings grouped in the centre. This is sometimes known as the "Zone System." The farther a zone is distant from the centre of a town, the smaller the number of houses to each acre of land and the smaller the number of stories permitted each house. The zone does not follow any particular lines—it may simply be a particular area.

Certain municipal authorities may note with advantage that Cologne limits the height of buildings in the centre of the city to five stories with a mansard; while, in the outer portions of the municipality, no buildings can be over three stories in height or occupy more

than forty per cent. of its lot. In Saxony in 1900, such a scheme as that outlined in Cologne was made compulsory for all towns. How much better our Canadian cities would be fifty years hence if they adopted and enforced such wise provisions now!

The German municipalities have endeavoured to secure the placing of houses so as to obtain the maximum amount of sunshine, and so as to make sure that space be left for parks, playgrounds and garden plots. These regulations generally tend to do away with speculation, they control the builder building for investment while giving the greatest possible freedom to the individual who desires to build for himself, thus encouraging individuality and resourcefulness.

The community is safeguarded when buildings are to be erected en masse; dividends on municipal loaned money are limited; lands are leased for periods of years with the proviso that the buildings erected thereon shall become town property at the expiration of the lease, and the right is reserved to purchase the property or cancel the lease in case of necessity.

Belgium Before passing from this portion of the subject, reference must be made to the method adopted in Belgium, where, by the development of a complete system of inexpensive workmen's trains, it has been demonstrated that by means of cheap and rapid transit a countryside may be built up and the town worker be made a suburban dweller. In that country, a workingman's round-trip weekly ticket (twelve rides) for a six-mile ride can be purchased for less than twenty-five cents per week; while for twelve miles, the cost is thirty cents. Fifty cents per week will carry him out thirty miles from the city. As showing the effect of these cheap transportation rates, it may be stated that the annual sales of tickets increased from 1,200,000 to 4,400,000 in a single decade.

Professor Emile Vanderwelder, in referring to the work, wrote as follows:

"Enter Hesbaye or Flanders from whatever side one may, the country is everywhere thickly strewn with white red-roofed houses, some of them standing alone, others lying close together in populous villages. If, however, one spends a day in one of the villages—I mean one of those in which there is no local industry—one hardly sees a grown-up workman in the place, and almost believes that the population

consists almost entirely of old people and children. But in the evening quite a different picture is seen. We find ourselves for example, some twelve or thirteen miles from Brussels at a small railway station in Brabant, say Bixensast, Genval, or La Hulpe. A train of inordinate length, consisting almost entirely of third-class carriages, runs in. From the rapidly opened doors stream crowds of workmen in dusty, dirty clothes, who cover all the platform as they rush to the doors, apparently in feverish eagerness to be first to reach home where supper awaits them. And every quarter of an hour from the beginning of dusk till well into the night, trains follow trains, discharge part of their human freight and at all the villages along the line set down troops of workmen—masons, plasterers, paviors, carpenters with their tool-bags on their backs.”

When Canadian railways of all kinds shall have provided cheap and rapid transit with seats for every passenger, as has been accomplished in Belgium, we shall have gone a long way towards solving the slum problem and may look for rapid development of the plan of suburban homes for the workingman instead of the present unsanitary conditions.

United States In the United States the work of city improvement has begun in Washington, Denver, Cincinnati, Cleveland, and the recent ordinance of the Municipal Assembly of the City of St. Louis may be of interest to Canadian municipal authorities. The Ordinance reads as follows:

“AN ORDINANCE CREATING A CITY PLAN COMMISSION AND APPROPRIATING TWENTY-FIVE THOUSAND DOLLARS FOR THE EXPENSES THEREOF

“Be it ordained by the Municipal Assembly of the City of St. Louis, as follows:

SECTION I.—There is hereby created a Commission to be known as the City Plan Commission, which shall consist of twenty-one citizens, including the President of the City Council ex-officio, the Speaker of the House of Delegates ex-officio, the President of the Board of Public Improvement ex-officio, and the Street Commissioner ex-officio, and the Park Commissioner ex-officio, who shall be appointed by the Mayor and who shall serve without compensation.

SECTION II.—The duties of the City Plan Commission shall be:

1. To make an investigation into existing physical conditions in St. Louis.
2. To determine and report upon what should be done to improve these conditions.
3. To prepare a comprehensive city plan for the future improvement and growth of the city, including recommendations for:
 - (a) Improvement of river front.
 - (b) Extension of streets and opening of new sub-division.
 - (c) Improvement of entrance to city from the Union Station.
 - (d) A rapid transit system.
 - (e) Extension of car lines into outlying districts.
 - (f) A playground, park and boulevard system.
 - (g) Location of public buildings and such other public works as, in the opinion of the Commission, will tend to make St. Louis a more convenient and attractive city.
4. To suggest the State and municipal legislation necessary to facilitate the carrying out of the recommended city plan.

SECTION III.—The Commission shall make all rules for its guidance and procedure. The Commission is hereby authorized to incur such expenses within the limits of the appropriations made therefor and to employ such engineering, architectural, and legal advice and such clerical and other assistance as in its judgment may be necessary to carry out the provisions of this ordinance.

SECTION IV.—The Commission shall submit a full and complete report to the Municipal Assembly on or before January 1st, 1912, and may make such other reports prior thereto as the Municipal Assembly may require or as the Commission may deem advisable.

SECTION V.—There is hereby appropriated and set apart out of the municipal revenue the sum of twenty-five thousand dollars to be known as the "City Plan Fund" to defray the expenses of the Commission incurred in fulfilling the objects and purposes of this ordinance.

Great Britain The movement in Great Britain has proceeded upon lines somewhat similar to those of Germany, with this exception: that while German methods lead to centralization

of industries and population, decentralization has been the bed-rock principle underlying what is known as the Garden City Movement.

The important pioneer legislation having to do with the movement in Great Britain is the Housing of the Working Classes Act, 1890, with amendments. Part I applies only to urban districts and for its effectiveness seems to depend largely upon official representation by the local authority for the wholesale clearance of slums and the erection of model municipal dwellings either on the cleared site or on suburban land. Part II makes it compulsory upon the owner to set in order unfit habitations and provides for the demolition of houses where the owner refuses to act; while Part III gives to local authorities the power to buy land, erect houses and lay out open spaces for parks, playgrounds and gardens. Part V applies to Scotland and Part VI to Ireland only.

The latest legislation in respect to housing is that passed by the British House of Commons in December, 1909. It is markedly in advance of any previous enactment of a similar character and therefore the following synopsis is appended:

THE HOUSING AND TOWN PLANNING ACT, 1909

The Act is divided into four parts, which may for convenience be considered under two chief headings, viz.: Part I, Amendments of the Housing Act 1890-1903; Part II, Town Planning. Part I is dealt with under Section I of the Act, while Part II is dealt with under the remaining three sections.

Part I of the Act is to be considered as one with the Housing of the Working Classes Act, 1890-1903. It gives freedom to local authorities, and more particularly, rural district authorities, to exercise the powers granted by the Housing Act, which heretofore have been granted only to urban authorities. It removes obstacles in the matter of procedure; restricts the period for which loans may be left outstanding; and affords increased facilities for the acquisition of land. At the same time the Local Government Board is given increased authority and a new and separate branch of the department of the Government has been established for the better administration of both Acts. The provisions in regard to the closing and demolition orders, also those in respect to underground rooms used as sleeping places, and the erection of back to back houses, form important features of the Act.

The original Housing Act requires that schemes under Parts I and II be confirmed by Parliament but this procedure has now been removed and confirmation of plans will be made by the Local Government Board.

Part II has an important bearing upon rural health conditions as it refers to the appointment of county medical officers and county public health and housing committees. Section 68, ss. 1, provides that every County Council shall appoint a Medical Officer of Health whose duties shall be those described by the general order of the Local Government Board. This Medical Officer of Health must devote the whole of his time to the duties of his office, and he can be dismissed from office only with the consent of the Local Government Board. Further, it is made imperative upon every County Council to establish a public health and housing committee, and it is the duty of County Councils to promote the formation or extension of building societies by making grants or advances to such societies or by guaranteeing advances made to them.

The Local Government Board requires streets intended for carriage ways to be not less than 36 feet wide and of this 24 feet must be carriage way. Every street more than 100 feet in length must be constructed as a carriage way.

No domestic building can be erected unless it has in front of it an open space of 24 feet, measured from the external face of any wall or building it shall front, and at the rear of such building there must be an area of one hundred and fifty square feet, without any building thereon.

**Town
Planning
and Co-
Partnership** The particular features of the housing problem as represented by Mr. Vivian are comprised in what he terms Co-partnership. A concrete example of this idea is to be found in the Co-partnership Tenants Societies, which are registered under the Industrial and Provident Societies Acts and are limited as to liability. The capital is raised in shares of £1 to £10 each, payable in full or by instalments. The Act provides that no person may hold more than £200 in shares, but any amount may be invested as loan stock, a form of preference capital. The Committee or Board of Management of each society is elected by the shareholders, and provision is usually made for the representation of tenants on it.

The methods adopted are briefly as follows: A society purchases an estate of land in the suburb of a growing town and plans or lays out the same so as to provide (a) suitable playing sites for the tenants and their children; (b) reasonable limitation of the number of houses to the acre, so that each house may have a private garden; (c) pleasing architectural effects, both in the grouping and designing of the houses.

Substantially built houses provided with good sanitary and other arrangements for the convenience of shareholders desiring to become tenants are let at ordinary rents as soon as erected. The rent charged is sufficient to pay a moderate rate of interest on capital, usually five per cent. on share, and four per cent. on loan stock, the surplus profits (after providing for expenses, repairs, and sinking fund) are divided among the tenant members, in proportion to the rents paid by them. Each tenant member's share of profits is credited to him in capital instead of being paid in cash, until he holds the value of the house tenanted by him, after which all dividends may be withdrawn in cash.

In such societies, it will be seen that an individual can obtain practically all the economic advantages which would arise from the ownership of his own house. Capital is obtained at a rate of interest below which the individual could usually borrow to build or buy his own house, while the preliminary and other expenses are less than under the individual system. By taking as his security scrip for shares in an Association of tenant owners, instead of a deed of a particular site and house, the tenant averages the risk of removal with his co-partners in the tenancy of the estate. The value of his accumulated savings is therefore kept up and can be transferred if desired, at less cost than land or house property of the same value. The results of a workman's thrift are in this way mobile as well as his labour; and this is important if he is to get the maximum reward for his knowledge and industry. Further, tenants having a substantial share in the capital of the society administering the property, are interested not only in securing good results while they are tenants, but also after they cease to be tenants, in keeping up the permanent value of their capital.

The objects of these societies are:

- (a) To provide expert advice, based on accumulated experience of how to buy, lay out, and develop an estate.

- (b) To raise capital for such societies as join the Federation and accept its advice.
- (c) To pool orders where practicable so that the benefits of wholesale dealing in building material shall be secured to the societies joining the Federation.

The Federation of Co-Partnership Societies

Each tenant society joining the Federation must pay up share capital in the Federation proportionate to its assets, the amount required at present being £10 for each £1,000 of property. It is intended that a substantial share of any profit made by the Federation, after paying five per cent. on shares, will be first allocated to a Reserve Fund, after which the remainder will be divided amongst its Tenant Society members in proportion to the use they make of the Federation. The Federation is governed by a Board, the members of which are drawn from the Boards of the societies in membership with it. It has:

(1) A Finance Department for raising money either by issuing shares, loan stock, or mortgaging, to meet the cost of building on the various estates, and for advising societies on all matters of finance in developing estates.

(2) An Accountancy Department for giving advice to societies in the membership, concerning the best method of keeping accounts and for periodically seeing that the method is adhered to.

(3) A Buying Department through which orders are pooled for material and the best terms secured for cash and large dealings.

(4) A Surveying, Planning and Building Supervision Department, which is at the service of societies in laying out their estates and planning and building their houses, the experience and plans of one society being utilized as far as possible and desirable for others.

It is intended at an early date to undertake the insurance of the property of its members against fire.

There are at present in the Federation some fourteen societies owning an area of 615 acres, with 6,225 houses. The estimated cost, when completed, will be £2,105,990. The assets of the societies proper in the Federation on December 31st, 1909, were £524,300.

The methods adopted insures that the value of the completed property is represented in the books of the society as the cost of materials and labour without any addition for builders', contractors' or financiers' profits. The cottages, as soon as ready, are generally oc-

cupied by the members, who, in addition to paying the usual market rent for the premises, increase their shareholding by small periodic payments until their investment reaches £50. Economy in construction is followed by economy in administration. Each tenant is required to pay for internal repairs apart from structural ones; thus they naturally keep down the cost of such work as much as possible. The society undertakes the external and structural repairs. The surplus profits being applicable to paying rent bonuses, each tenant is thus encouraged to do his best to help the society financially by recommending suitable tenants for new or unlet cottages and by a general oversight and protection of property from damage. Loss of revenue by non-payment of rent is guarded against by the society having a lien on the tenants' investment. The greater the efforts of the tenants in the direction of economy, the larger the rent bonus is likely to be. Most of the societies have not been at work long enough to get the full economic advantages of this system, or to allow of a final estimate being made of what these will prove to be. After meeting all charges and paying five per cent. interest on capital, the older societies up to now have been able to declare a dividend of 1s to 1s 6d. in the pound on rent. Each society creates a sinking fund at the rate of ten per cent. per annum, which, capitalized at three and a half per cent. will give the sum expended on the property in sixty years.

The following paper on "The Swedish Conservation Law" was read at the session on Tuesday afternoon by Dr. B. E. Fernow, of the University of Toronto.

THE SWEDISH FOREST CONSERVATION LAW

BY DR. B. E. FERNOW

The writer, in the summer of 1910, under the auspices of the Commission of Conservation, but at his own expense, made a flying trip to and through Sweden. Without going into an elaborate account of the observations made which would have a bearing on developing forest policies in Canada, the writer would accentuate the one institution, most democratic, most suggestive and possible of adoption with slight modifications in some parts of Canada at least. It is the institution of County Conservation Boards.

This institution is the result of a law enacted after an exhaustive investigation and report in the year 1903. It became operative only in 1905, but has already in the five years of its operation accomplished much in improving conditions.

While in Sweden these Boards are instituted with sole reference to forest preservation, in Canada the functions of such Boards could readily be extended to look after the interests of all resources within the county.

Under this law, in each province or county of the Kingdom, with the exception of the two northern sparsely settled ones of Vasterbotten and Norrbotten, a Board of three or more persons is constituted to supervise the working of privately owned forests—the State forests being under a separate, efficient administration. This Board consists of three members—one appointed by the Government, one by the County Council, and one by the County Agricultural Society. Upon demand of the people, additional members may be elected by popular vote. The Board chooses a technical advisor from the State forest service, whose salary is paid by the Government, and with the assistance of whom and also of a number of rangers or inspectors, the Board applies the law.

The remarkable and eminently wise and democratic feature of the law is, that it does not undertake to prescribe in detail what is to be done, but leaves this to the discretion of the Boards, with the mere injunction that a conservative treatment of the woods must be en-

forced, and that regeneration or reforestation must be attended to. How this is to be accomplished is left entirely to the Board to decide. The Board, however, working under the County Council, has the power to enforce its rulings in the courts by injunctions, money fines, confiscation of logs, etc.

Naturally, at first, different Boards construed the law differently and applied the funds in different ways. This was undoubtedly intended by the law in order to give scope to suit varying conditions. There are, however, three directions in which eventually all have come to work, namely, education, assistance, and police regulations.

Going into more detail I may cite conditions as they have developed in the province of Vermland through the efforts of the efficient expert, Lansjagmastare A. Nilsson. In this province, the State owns only four per cent. of the forest area, while thirty per cent. is owned by large corporations, and sixty-six per cent. by small holders, who hold, at most, tracts of 600 to 700 acres.

The forestry expert gives three separate technical courses of instruction to woodland owners, each lasting about two weeks, namely, two in the fall on silviculture and mensuration, and one in the spring on draining, the utilization of the many peat bogs being an important problem. Two lectures a day and six to eight hours' demonstration in the field is the time given to these courses, some four or five forest rangers assisting at the demonstrations. The Board pays the living expenses of those attending these courses. The number admitted out of the eighty to ninety applications is fifty. In five years some two hundred or more men attended these courses. In addition, literature of a popularly written but technical character is distributed. Sometimes this instruction is given in combination with high schools or country schools.

To those who ask for it, special advice is given in the management of their properties by placing an expert on the ground. To those who desire to plant waste or old clearings, seed is furnished up to fifty pounds, at one-tenth of its cost, and other plant material may, under certain circumstances, be supplied free of charge.

The owner has a right to cut as he pleases, but if natural regeneration fails to appear he is obliged to plant, the Board determining when the necessity for such planting has arrived. If the owner objects to the decision of the Board, a special inspection is ordered, the expense of which he must pay, and at the same time he loses all claim

to assistance. Although the power of the Board is great, the policy is to secure co-operation rather than to use force. By this time, owners have learned to see the advantages of these arrangements, and only speculators make trouble.

Protection against forest fires is also within the jurisdiction of the various Boards. In the better settled districts danger from fire has almost passed, the population being largely owners of woodlands who have learned to use care. Indeed, in Vermland no large fire has been experienced in five years. Brush burning is, therefore, not practised, the tops being used for charcoal and fuel generally. In other parts, more endangered, brush is burned at an expense of about twenty-eight cents per acre. The watch tower idea was introduced fifteen or twenty years ago in Jamtland, such towers being distributed about six miles apart. As a result, no large fires have occurred since 1901. Incidentally, to show how the forest fires have been reduced, it may be of interest to state that in 1888 the area burned over in the State forests was estimated at 30,000 acres, and in private forests in four provinces, at over 130,000 acres. In 1908, less than 500 acres were burned over in the State forests of about twelve million acres extent. Although fires have not been entirely stopped, they have become very much rarer and less extensive. Indeed, one is struck, along the railways, with the absence of recently burned areas.

The funds to carry out the policy of the conservation boards come largely from a small duty on wood exports, namely fourteen cents and eight cents per ton respectively on dry chemical and mechanical pulp, and half these amounts on wet pulp; seven cents per hundred cubic feet on sawed material and half that amount on saw logs and fuel wood. This is to be changed to a direct tax on all wood cut, except that for home consumption*. The export duty yields altogether from \$160,000 to \$190,000, or about five cents per hundred cubic feet of export material. In addition, the State pays the salaries of the experts, some \$16,000, and also gives contributions in proportion to what the county grants. This contribution by the counties now amounts to about \$27,000 and the State duplicates this, so that about \$230,000, is spent on this policy of maintaining or securing conservative management of privately owned forests which have an extent of about thirty-five million acres. The expense, therefore, amounts to about two-thirds of a cent per acre.

The funds at the disposal of the various Boards vary. In Verm-

land and Jamtland, for example, the receipts aggregate about \$30,000, but by careful financial management and by not using the whole appropriation, the latter province in 1909 reported funds at its disposal of over \$60,000.

If for the other provinces of Canada there may not be more than suggestions in this institution of conservation boards, there is to my knowledge at least one where the conditions are such as to permit almost the direct adoption of this system, viz., Nova Scotia. Here almost the whole forest area is owned privately and in small parcels; the population is well distributed and settlements are scattered through the woods, the conservation spirit is already aroused, and the possibilities of improving forest conditions are great.

In other provinces, at least part of the country is in similar condition, and similar means could be applied. As in Sweden the backwoods country is under a different law, so in Ontario and Quebec for different parts different methods are applicable.

Mr. John Hendry, of Vancouver, was prevented by ill-health from being present but forwarded three papers for the consideration of the Commission, one on the work of the Commission in general, one respecting the work of the Committee on Mines, and a third relating to the work of the Committee on Forests. The following are the papers contributed by Mr. Hendry:

THE WORK OF CONSERVATION

BY JOHN HENDRY

While fully agreeing that the conservation of our natural resources is a matter of the greatest interest to the Dominion as a whole, and realizing the importance and advisability of a conference such as this which brings together members from the Atlantic to the Pacific and affords the opportunity of an interchange of ideas and information as to the varying conditions over such an extent of territory, I would nevertheless ask the members to take under consideration whether certain changes could not be made in our organization which would greatly increase its effectiveness.

I think it must be recognized that the subjects under discussion, and with which we are dealing, are largely within the control and management of the different Provincial Governments, and that any practical result from our meetings depends entirely on the disposition of these governments towards giving effect to any recommendations that may be made. The distances members have to travel prevent many meetings being held and militate against a full representation at those that are called. The meeting is held, we pass a number of academic resolutions and return to our homes to meet again perhaps in a year, and repeat the performance. Our Association has not even a consultative importance with the different governments, who, I dare say, would rather follow their own views or seek the advice of those intimately conversant with the conditions of their own province, in preference to following opinions of a general meeting such as this.

In the Chairman's remarks at the discussion on organization at the first annual meeting, he paid attention to one difficulty which he considered was a serious one, though capable of being surmounted. This was with reference to the fact that the members of the Commission are representative of all the provinces of the Dominion, and that by reason of the difficulties due to long distances, the Commission might tend to meet only once a year for the purpose of ratifying what the officials had done during that year. This he thought, would be very objectionable. He thought the best method of overcoming this objection would be to form committees upon the various

important branches of natural resources, appointing one man as chairman of each committee, the result to be that the Chairman of the Commission along with the Chairman of Committees would form a working executive. This was a tentative proposal in order to get the work commenced and the feeling was that, after six months or a year, if a better method was necessary, this arrangement would be liable to alteration. It was also advocated by several of the Commissioners that there should also be formed committees presided over by chairman and representing each province, so that provincial reports might be submitted to the Commission dealing with the special conditions in each province. The Chairman expressed his approval, saying that it would be a splendid thing to have co-operation with provincial commissions.

What I would suggest and what I would like to see carried into effect is that each province should appoint a standing commission to be presided over by a cabinet minister, this commission to have in its care such subjects as we have been discussing and to act as an advisory or consultative board in conjunction with the Minister. Reports of their doings could be forwarded to the Secretary of the Commission at Ottawa, and an annual or semi-annual conference held at which reports from every province would be presented, showing the matters dealt with, how they were dealt with, and the effectiveness of any new legislation or regulations. The Chairman of each provincial commission, being a Minister could, if so disposed, probably indicate the course the Government he represented was disposed to pursue. If such a change could be made and the co-operation of the provincial governments enlisted, I think the effectiveness of our organization would be greatly increased. I commend the matter to the consideration of the meeting and hope to hear a full discussion on its merits.

I would also suggest that the proposal put before the Commission last year and consideration of which was then deferred, should now be carried into effect, and that provincial committees of this Commission be appointed with power to go into all the various subjects which have a bearing on the conservation of our natural resources. In this way, the needs of the provinces could be better looked after as conditions vary so much in each province that what may be requisite and necessary in one may not be beneficial nor economical in another. The Chairman of each provincial Committee would

have power to call meetings of his provincial committee and to invite men whose opinion with regard to conservation would be valuable, to speak at public meetings held at various times and places throughout the province, thus creating a lively public interest. A paid secretary and other necessary officials would be necessary to collect the data to put before the Committee who could discuss the various matters before submitting them to the Commission. When matters come before the executive and when committee and other meetings are held in the East, it is very difficult for the Western members to attend them and to give advice about western conditions, owing to the distance and consequent length of time it involves.

This proposal, I think, will be for the benefit of the Commission, as the members of such proposed committees, knowing the special conditions applicable to each province, would be able to send in reliable reports of the state of our natural resources, and save the time of the Commission that would be taken up in discussing these reports in detail at the annual meetings.

With reference to the effectiveness of the Commission so far as the appropriation voted by the Government is concerned, I hold the same opinion which I voiced at the First Annual Meeting; that the Chairman of the Commission should not be hampered for funds and should have as substantial an appropriation as is necessary to carry on the work.

There is another matter I would like to bring before this Commission, and that is the great waste of physical and moral power throughout the country, due to the increasing use of narcotics and intoxicants. Man has inherited a superb physical frame, but habits of excessive indulgence are impairing it, and bringing it to a lower state of efficiency. The people are being taken away from the land where an active life upbuilt them, and where work and achievement were honoured. In the large towns they now find artificial and uselessly exciting amusement, and unwholesome dissipations, the effect of which tends to make them degenerate more and more. To nothing else but the lack of temperate social habits can we attribute the spirit of anarchy and lawlessness which appears on the increase every year. I have been very glad to see the appointment by the Dominion Government of a Royal Commission on Technical Education; for industrial education alone can save our working classes from degeneracy. I hope, therefore, that this Commission will express its

approval of the move that has been made, and recommend to the Government the adoption of a full and complete system of industrial education. That will not only insure that the rising generation will be put in a position to acquire a definite and practical training which will greatly assist the conservation of our resources by more perfect and less wasteful methods of production, but will also mean the salvation of many who otherwise would drift about in unemployment and finally become unemployable and cease to be an asset to the nation.

CONSERVING THE FORESTS

BY JOHN HENDRY

In the consideration of the question of the conservation and intelligent and economic use of our forest resources, the preservation of the forest from destruction by fire, is undoubtedly the first and greatest need, as this danger is one that recurs every summer. In this instance the truth of the adage that "prevention is better than cure" is most marked, as fire in a few hours will destroy what cannot be reproduced in a century, if ever. In the interest of the general public as well as of the owners and manufacturers of timber, the safeguarding of the forests from fire should be recognized by the various governments as being one of their most important functions, and the necessary funds for its accomplishment should be provided in a manner that is commensurate with the importance and magnitude of the work.

In British Columbia, at least in the Coast district, re-afforestation, in my opinion, is neither practical nor necessary at the present time. There are no areas of bare land to utilize for the work, and on the areas of logged-over land there is much timber of small size and of kinds not now marketable left. Owing to the mild moist climate, new growth of various kinds, and underbrush, spring up so quickly, that unremitting attention would be required to prevent the trees planted being choked. Observation of land already logged discloses the fact that there yet remains on the ground a considerable number of small fir, cedar, spruce and hemlock trees, together with a crop of seedlings of the last named variety. These last seem to thrive under any difficulties and with but very little attention nature

can be left to renew the forests with their species, which, on the Pacific Coast, are exceedingly useful woods suitable for general building purposes. Protection from devastating fires is therefore by far the most important subject, and work to this end should be prosecuted in the most energetic manner.

The necessity and the duty of protecting the forests being recognized, it seems a glaring anomaly that conservation and economic use of our forests should be urged on the one hand, and governmental management and regulation on the other—in very many respects, work tending to exactly opposite results. Timber land should not be open for settlement and applications for homesteads or pre-emptions on timber-bearing land should not be granted. Eighty-five per cent. of these applications are not for the purpose of making a home, but for the purpose of speculation. In the cases where some attempt has been made towards using the land for agricultural purposes, the destruction of timber through clearing operations far outweighs the advantage of obtaining an occasional settler. Is not the policy of forcing the holder of a timber berth to cut all the timber off his berth within a stated time, whether the demand requires it or not, both an anomaly and a mistake? Economic conservation should indicate just the opposite course, and the timber holder should be encouraged to cut no greater quantity than will meet the requirements of the various markets. To accomplish this the holder of timber berths should be assured in his tenure while there is sufficient value in the timber on the berth to make it worth while holding, and should not be forced to cut it all in a short space of time, in order that the land may be sold or settled on by a speculator, or even a homesteader, who, before he can use the land for agricultural purposes, must cut down and burn the very timber, the conservation of which is urged.

In considering the question of keeping the land as timber land instead of using it for agricultural purposes, it may be well to see what each is worth to the country. For example, in our province of British Columbia, the timbered land will have 10,000 feet to 40,000 feet of timber to the acre, say on an average 25,000 feet, which would furnish to our transportation companies material for freight to the extent of $37\frac{1}{2}$ tons. If used for agricultural purposes it would take crops for fifty years to equal this. In marketing this crop of timber, there would be spent, in wages only, over \$5 per thousand feet, or \$125 per acre, and the Government would receive 50 cents per thou-

sand feet or \$12.50 per acre as royalty. How many years of cultivation for agricultural purposes would it take to produce the same result? Why should there be haste on the part of the Government to slaughter such a valuable asset? It may not be felt immediately or for some years, but the law of supply and demand is inexorable, and as sure as night follows the day, every thousand feet of lumber used or destroyed is decreasing the stock of timber, and lessening by just so much a supply of easily available timber. Such a policy must inevitably increase the price of lumber products. It is not as if land for farming purposes is so scarce in Canada, that land bearing timber must be denuded of it in the most hasty, reckless, unprofitable and improvident manner, in order to find land for farming pursuits. There is country enough without merchantable timber to furnish farms for all desiring them. Let us preserve our timber land for timber purposes, to be used as carefully and economically as circumstances permit. Allow me to remark, also, that if not harried by Government interference with his tenure, the timber owner, on account of his own self-interest, will accomplish this more effectually than regulations and restrictions. In most instances the timbered land is not fit for agricultural purposes, either on account of its nature or the expense of clearing it, but even if it is, the policy of keeping it with its natural crop of timber, should be followed. It is not as if the land areas of the country are thus being destroyed; their use for farming purposes is only being postponed; the land still remains to be used for agriculture when its original crop has been reaped. In my humble opinion, it would be better to postpone its use for that purpose as long as possible.

MINING IN BRITISH COLUMBIA

BY JOHN HENDRY

The year 1910, in the province of British Columbia, was a record year in mineral production, the total value of the mineral extracted being \$26,183,505. It is interesting to note that the province has continued to maintain its average proportion of the mineral production of Canada. If the aggregate value of the production of the Dominion be taken for the 25 years from 1886 to 1910, at \$1,120,000,000 (which allows about \$95,000,000 for 1910) it would

appear that British Columbia can claim to have produced between twenty-seven and twenty-eight per cent. of this large sum.

The aggregate value of the mineral production of this province for all years to 1910 inclusive is nearly \$374,000,000. It is a striking fact, as indicating the substantial increase in the value of the mineral production of the province in recent years as compared with those prior to 1906, that fully forty per cent. of this large value is the production of the last five years, while more than half (about fifty-three per cent.) is that of the seven years from 1904 to 1910. In 1910, there appear to have been serious decreases in the production of lead, copper and zinc, but these were more than compensated for by the unprecedented increase in that of coal. Never before in the history of coal mining in the province has there been so large an increase made in a single year, the two nearest annual increases having been that of 350,000 long tons in 1891 over the production of 1890, and of 323,000 long tons in 1909 over that of 1908. Last year's increase in net production of coal over that of 1909 is, however, greater than that of the two largest increases previously on record added together, or 794,000 long tons in this one year as against 678,000 tons in those two years.

The expectations of those directly interested in the production of zinc, that there would be an increased output in 1910, were by no means realized; for the quantity marketed was small in comparison with the production of 1909. An unfortunate combination of circumstances brought about this decrease which was not the result of lack of ore. The burning of bridges and trestles along several miles of the Kaslo and Slocan railway last July took away from the mines their transportation facilities, so that continued shipment of mine products was quite impracticable during the remainder of the year. The destruction by fire of the Whitewater Concentrating Mill compelled a cessation of production there. It is hoped that the investigations which the Dominion Department of Mines is making in connection with the smelting of zinc ores, with a view to finding a solution of the problem of how to turn to profitable account the great quantities of zinc and lead zinc ore known to occur in Kootenay mines, will be successful.

There was no production of iron ore reported in 1910 in British Columbia; nor, so far as known, has there been much activity in the direction of further development of known iron-ore properties. Some

time ago the Dominion Department of Mines published a report by Mr. Lindeman on a number of iron ore deposits on Vancouver and Texada islands. The only additional information since received is concerning the discovery near Upper Campbell lake on Vancouver island, of a deposit of magnetic iron of high grade and purity, samples on analysis showing as high as 70 per cent. iron, .04 per cent. sulphur, .08 per cent. citarium, and .0087 per cent. phosphorus.

THE FORESTRY PROBLEMS OF BRITISH COLUMBIA

BY A. C. FLUMERFELT

Member of the British Columbia Forestry Commission

I

Let me direct your attention westward to the forest province where half the merchantable timber of Canada now stands. Let me describe to you the work of the Forestry Commission of British Columbia, and the circumstances that gave rise to its appointment. In the early days on the Pacific coast of the Dominion the forest had little value. It was the farmer's enemy; it hindered the prospector on his hunt for gold; and the few thousand people whose settlements were scattered among the multitude of trees were hampered at every turn by the enormous growth of wood. The commercial activity of the country was oppressed by it; the forest "encumbered the land." It is true that small sawmills had begun their work, but the local need for lumber was easily satisfied, the export trade was in its infancy, and insignificant cuttings along the waterfront, on the very fringe of the ceaseless forest, supplied the logger with all the timber he could sell.

It was inevitable therefore that the Legislature of this small isolated population should have put no value upon the standing timber that it owned, and that the timber should have been given away to every purchaser of land—thrown into the bargain along with the deer and the berry bushes and the scenery. In fact, even upon these attractive terms, it was by no means easy to dispose of timber land; for capital was scarce in those early days, and in any case, it was not often available for a stumpage investment that, according to appearances, might possibly require half a century to mature.

Then came the great impetus caused by the completion of the C. P. R. by which the Pacific coast country was linked up with the rest of Canada. Population flowed in, trade improved, and the choicest tracts of the most accessible timber of British Columbia be-

gan to have a slight market value. Prompted by this, the Legislature of 1888 made the first attempt to grapple with the problem of selling forest property. It placed a price of fifty cents upon every thousand feet of lumber cut, a price that has remained unaltered ever since.

Capital, as I have said before, was very scarce in the west, and the struggling saw mill owner needed all that he possessed for the active development of his business. He could not easily afford to sink money in the purchase of timber lands. Hence that same Legislature of 1888 organized the system of leasing Crown timber; a system that gave the lumberman all the stumpage that he needed without obliging him to pay cash for it. Moreover, by granting these leases at the cheap rental of ten cents per acre to *bona fide* operators only, the establishment of new saw mills in the Province was given direct encouragement.

For seventeen years this leasing system continued to exist as the standard method of disposing of the provincial forests, but long before its abolition a most important change had been made in the idea behind it, which had been originally—as I have said—the encouragement of immediate sawmilling operations in the Province by grants of cheap Crown stumpage. In reality, the first step towards the construction of the modern forest policy of the provincial Government had been made. That step was simply the granting of leases at higher rates to non-operators; the throwing open of timber lands to the investor.

And now let me summarize the situation as it existed in 1905, the year in which the leasing of timber was brought to an end; the year that saw the adoption of a new and truly remarkable policy by the province of British Columbia. By that year, about one and a half million acres of the Crown timber lands had passed by sale or by railway grant into private ownership and out of Government control; another million acres had been transferred to lessees. Probably thirty billion feet of standing timber had been alienated. Neither of the two forms of tenure secured to the people of the Province any satisfactory share in the future value of the stumpage they parted with; for any future increase in the value of these two and a half million acres would benefit the private lessee or purchaser and not the Government. As it was very evident that the value of British Columbian timber would rise greatly in the years to come, it was most desirable that some better method than lease or sale should be discovered for disposing of the Crown forests.

To quote the words of our Report, "the legislative problem was solved in a most ingenious manner." In this year, 1905, the Government threw open the timber lands of the whole Province. It invited private individuals to join it in a partnership in each and every square mile of the Crown forests. There was no sale, no auction, even no lease. The incoming partners were asked to sink no capital. The investor was merely asked to register a formal application to become a partner with the Government in the timber on such-and-such a square mile of the Province—and the partnership was his. Stated in these attractive terms, the procedure sounds like some wild story of a commercial fairyland, where timber lands and wealth are given for the asking; but the truth is that a number of sound and useful "strings" were attached to these British Columbian gifts. In fact, the idea of a gift was entirely absent from the mind of the provincial Government. The Government freely admitted investors to partnership in Crown timber, it is true, but it did so absolutely on its own terms, and it frankly admitted that only the future rise in stumpage and lumber values would enable it to say what these terms should be.

In fact, the partnership arrangement could have been stated thus: "Here"—might have said the Government—"are immense forests that will be put to no use for many years to come. They produce no revenue; they are in constant danger of destruction by fire; and it is beyond our power, financially, to give them any efficient protection. Moreover, the Province needs revenue now, in its growing-time and youth. Therefore, we will place these forests in private management under our supreme control, and we shall frame regulations from time to time, in order to make sure that the timber is properly looked after. The revenue needed by the Province and that needed for the conservation of the forest, we shall obtain by requiring investors to pay for their privileges—so much a year for their partnership rights and so much as royalty on any timber they may cut. As the 'market,' or 'prospective,' or 'speculative,' value of stumpage rises, we will take our fair share of the 'unearned increment' by requiring a larger annual payment to be made to us. As the profits of lumbering operations increase, we will take our fair share of these by requiring a larger royalty. To begin with, we shall require the same royalty that we have been obtaining for the last seventeen years, viz., fifty cents a thousand feet; and we shall require an annual payment of about one and three-fifth cents per thousand."

This, then, was the logic of the policy of 1905, and the result is a matter of common knowledge. Upon these extremely moderate and equitable terms nine million acres of timber land were taken up by investors within three years.

Now it is evident that no ordinary situation had been created. Nine million acres of some of the choicest timber in the world represents a property of enormous magnitude, and the transfer of this from the Government to a partnership in which a very large number of private individuals were placed in active management, gave rise inevitably to a host of most complex problems. For example, think for a moment of the difficulty of adjusting the claims of the Government, the operator and the investor upon any point where they should happen to conflict. The Government, in fact, had practically gone into the timber business on a vast scale and it was faced by the triple duty of securing to the people of the Province fair treatment for their forests and fair prices for the timber sold; of giving equitable treatment to the investor in Crown stumpage; and of building up by wise assistance the active operations of the lumbering industry. Since 1905, this duty had become (as Stevenson has said of honesty in modern life) "as difficult as any art."

In these remarkable circumstances the Government felt that the most careful and deliberate study of the situation was imperative. It placed a Reserve upon all the remaining timber lands of the Crown (that are variously estimated at one-quarter or one-third of the timber areas under provincial control, in the neighbourhood, let us say, of four million acres) and it proceeded to appoint a Royal Commission of inquiry, composed of Mr. Fulton, who then held the portfolio of Lands, Mr. Goodeve and myself.

II

From the beginning, our work as Commissioners fell naturally into two divisions: study of forest conditions in the Province; study of forest conditions elsewhere. By contrasting the impressions we obtained from these two sources we endeavoured to arrive at a sound judgment concerning the improvements we should recommend in the forest policy and forest administration of British Columbia. We found at once, that in practical matters of forestry there was much for the province to learn. The older parts of Canada and many of

the States of the Union had passed through the crude and early stage of forest exploitation at which we ourselves had just arrived; ideas and methods new to us had been well tried and proven by other governments. Ontario, Quebec, the United States Forest Service, the voluntary fire associations of the western States, each of these could show us how to do something that we ought to do.

I should be afraid to venture an opinion concerning the number of books, pamphlets and reports on forest subjects we received and digested. There was available material here and there. But on the whole, we read the voluminous literature of the beginnings of forestry upon the continent of America with a feeling akin to disappointment. We were depressed by the smallness of the work that had been accomplished and by the greatness of what ought to have been done; by the absence of experiment and investigation; and by the meagre amount of information concerning forest resources. There seemed to be so much academic discussion, so much good sentiment about conservation, and so little practical support given to aggressive work, so little expenditure of hard cash. It was like the Scotchman's breakfast in the fishing story—a bottle and a half of the best alcohol with half a penny bun. We grew accustomed to State Boards of Forestry that were all title and annual report, and no treasury.

The upshot of the matter was that we became convinced that conservation in British Columbia ought to be a very different and a very business-like affair. That is what conservation means, at bottom: *the application of ordinary business principles to natural resources*. It must be action and not mere talk; immediate action and expenditure of large sums of money. Hence our recommendations to the Government that "large appropriations must be made and a well-manned specialized forest service brought into being, thoroughly equipped."

In the matter of conservation, gentlemen, the Province occupies a position that, looking at the history and the sad experience of forest countries, may be described as unique. Fire has ravaged certain districts; man has wasted timber freely; but British Columbia is in the extraordinary position of being able to undertake the conservation of the public forests before and not after fire and waste have squandered the bulk of them.

We came to the broad conclusion that upon two conditions natu-

ral re-afforestation would take place in British Columbia. "Firstly," we said, "both the young growth and the old must be protected from fire; secondly, there must be exercised a firm control over the methods under which the present forest crop is being removed. In short, effective re-afforestation depends largely upon effective discouragement of waste." "And," we continued, "by protection from fire we do not mean the mere temporary employment here and there of men to fight conflagrations that have been allowed to spread. We have in mind the active prevention of fire by the systematic work of a well-knit organization such as that described in our Report. This work would include, as a matter of urgency, the task of evolving for each locality a sound method of dealing with the reckless style of lumbering that leaves in every cut-over area a fire-trap of debris. That the young timber upon which our whole future as a lumber-producing country depends should be left, at the pleasure of any thoughtless workman, to grow up under the imminent menace of fire, is so absurd commercially that an attempt at regulation is imperative."

A vexed question—this one of the disposal of debris; but one for experiment and not for discussion. The expenditure of a little public money on experiments will soon decide whether or not it will be commercially feasible in British Columbia, as it has been in other forest regions, to put an end to the liberty of careless workmen "to leave debris in any manner that may suit their own convenience, and without the least regard for the safety of the cut-over area or of the adjoining forests."

As for logging regulations, we felt that the time was opportune for the restriction of waste. The levying of royalty upon all waste should prove an effectual remedy.

Taking a comprehensive view of the whole subject, we felt that this great timber business of the Government of British Columbia should be placed upon the soundest financial footing. Hence our recommendation that its capital should be kept intact, that it should not be dissipated by treating it as current revenue. Royalties, we felt, were true forest capital, and we urged most strongly that they should be returned to the source from which they were produced in the form of protection for the growing crop. "No special circumstances," we continued, "that would justify departure from ordinary business principles have yet been proved to exist. General natural re-afforestation, though probable, is not an established fact in the

Province, and our uncertainty regarding it will not be removed until a thorough investigation has been made by the forest service. Until definite information has been obtained, we consider it essential that no surplus of royalty-capital should pass into general revenue." We recommended the establishment of a forest sinking-fund.

The rest of our conclusions, gentlemen, you will find in our official report. In many a practical matter of forest protection, as I have already said, our young Province has much to learn from older communities, though it is learning fast. But in the matter of forest policy we have no doubts and no humility. We challenge the governments of the continent to produce a method of administering a tremendous forest estate that in breadth of statesmanship is comparable to the policy conceived and elaborated by the Honourable Richard McBride and his government. To have put a stop to alienation of the public forests and yet, without alienation, to have raised the annual forest revenue to two and a half million dollars is an extraordinary achievement. Further than this, so well thought out has been this provincial policy, that without the least danger to the public interest the provincial Government was able, only last year, to give increased stability to the lumbering industry by granting a perpetual title to those who had made investments in the nine million acres of licensed timber lands. It was possible, at one and the same stroke, to make this concession to the lumbermen and to advance the public interest by it, for the direct effect of security of tenure was to enlist the hearty co-operation of investors in the conservation of the timber they owned jointly with the Government.

The provincial policy, is based upon masterly principles:

- (1) No alienation of the people's forests.
- (2) Absolute reservation of a fair share of the "unearned increment" on Crown timber.
- (3) Partnership between the government and the lumbermen in the profits of the lumbering industry.
- (4) The judicious holding in reserve of forest areas that can be thrown into the market should any stumpage-holding monopoly threaten the Province.

Let me ask whether you think well of a government that in three short years has changed its annual expenditure in the war against forest fires from sixteen thousand to one hundred and eighty-five thousand dollars? Is there not a touch of the magnificent in this swift recognition of a duty?

And now, gentlemen, let me enlist your interest in the progress of conservation in the part of Canada from which I come. The protection and the wise control of the cutting of the two hundred and forty billion feet of timber in British Columbian forests is of vital importance to the entire West; for this timber builds the prairie farms. Nay, further, the conservation of half the merchantable timber of Canada is a matter that affects all of you. Canada will not become the great wheat-producing country that we hope to see her, the growth of a farming population of millions in the vast region of the timberless prairie will be hampered and discouraged unless lumber can be obtained freely and cheaply for the building of the homes. Overcutting in the United States will at no distant date exhaust that source of cheap supply; the east of Canada will need its lumber for itself. The proximity of coal was the vital factor that built up the iron industry, that back-bone of Great Britain's commercial supremacy. The proximity of timber—British Columbia's timber—will be the vital factor that shall enable the granary of Canada to produce its wheat. The cheap lumber that will build the farms will be the British Columbian. In this respect, I claim our provincial forest policy is one of the national questions of Canada.

WORK OF THE COMMISSION IN 1910

The following briefly summarizes the work that has been done by the Commission during the past year. For convenience of treatment, the matter has been classified under the heads of the various committees into which the Commission is divided.

Public Health The Committee on Public Health met in Ottawa on May 23rd, 1910, and appointed Dr. Charles A. Hodgetts as its Medical Adviser.

On October 12th and 13th, at the instance of the Standing Committee on Public Health of the Senate of Canada, a conference of Dominion and Provincial Public Health Officers was convened at Ottawa. The Conference appointed four Committees, one each on:

1. Pollution of Waterways.
2. Tuberculosis.
3. Harmonizing Health Laws.
4. Central Council of Health and National Laboratory.

The reports of these Committees were adopted by the Conference, and the recommendations made have been laid before the Federal and Provincial Governments.

At this Conference, Dr. Hodgetts delivered an important address on "Pure Water and the Pollution of Waterways." This, and also the Report of the International Commission on Bovine Tuberculosis, was printed by the Commission in pamphlet form.

An investigation is being made into the prevalence of infantile paralysis and circulars are being forwarded to every medical practitioner in Canada asking for particulars of the cases with which he has had to deal. It is expected that valuable information will be obtained regarding both the extent and nature of this new disease.

Investigations are also being conducted into the housing conditions in Canadian centres of population and the existence of slum districts in the larger cities. Municipal building by-laws and build-

ing regulations are being examined and a comparison of them made with those in use in the better regulated cities of foreign countries. The object is to ascertain the actual conditions prevailing in Canada, and, in the light of what has been done in other countries, to recommend such action as will be effective in preventing and removing unsanitary living conditions.

Lands This Committee was without an expert Agriculturist until early in December, when the services of Mr. F. C. Nunnick, a graduate of the Ontario Agricultural College at Guelph were secured.

In August, question sheets, compiled by the Chairman of the Committee on Lands, were sent out in each province to be used in collecting facts concerning amount of land under field crops, unbroken pasture, woods and summer fallow. These sheets also contained questions on rotation of crops, seed selection, weed prevalency, insect pests, fuel supply, water supply, illuminants and typhoid.

The means adopted to secure this information may be termed that of an agricultural census. In each province, men were employed to visit a hundred or more representative farms to tabulate on printed forms the information desired. The inquiry was of a detailed nature, and as it was carried out under the supervision of the officials of either the provincial departments of agriculture or the agricultural colleges, the results will undoubtedly give a fairly representative idea of the actual condition of agriculture in each province with special reference to soil fertility, the inroads of weeds and insect pests, farm sanitation and the prevalence of scientific farming as shown by the use of crop rotation, the application of fertilizers and the practice of sowing selected seed.*

The information is now being tabulated and condensed and when completed it is expected that from the figures shown timely and valuable recommendations may be made, and a basis laid for determining the lines upon which future investigations should proceed.

Forests. The two subjects on which the Committee has concentrated its efforts are the prevention of forest fires, and the creation of forest reserves.

* For summary of the results of this inquiry, see Dr. Robertson's address, p. 8.

At the Annual Meeting of the Commission, and also at the sitting of the Forestry Committee on May 2nd last, the setting aside of the Eastern slope of the Rocky Mountains as a forest reserve was recommended to the Government. It is gratifying to note that the Government did subsequently set apart this area by Order in Council and that a Bill is now before Parliament to permanently reserve this large area of some 14,600 square miles.

At a meeting of the Committee on May 2nd last, an amendment to the Railway Act was recommended whereby railway companies should be held responsible in penalties for fires spreading from their rights of way or due to sparks from their locomotives. This recommendation has been placed before the Federal Government.

In order to show the need for action with regard to forest fires, it was decided to investigate thoroughly the causes of those occurring during the past season. In August, therefore, the services of Mr. John Thomson, a well-known timber ranger, were engaged, and he was instructed to visit and report on forest fires during the season. After visiting part of Ontario, he proceeded west along the lines of railroad to Revelstoke, B.C., returning from there to the northern part of Ontario and parts of the province of Quebec before making his report.

In September, Mr. W. F. V. Atkinson was appointed Forester to the Commission and he proceeded to meet Mr. Thomson in British Columbia, and to make investigation of the forest protection work, natural conditions, and causes of fires in that province. Mr. Thomson was allowed to return and complete his work in Ontario and Quebec.

The detailed results of these investigations are now being prepared for publication in the report which the Commission will publish. In this report the following additional subjects will be treated:

Laws relating to the disposal of public timber lands and the administration of same.

Inventory of standing timber;

Fire laws and their administration;

Insect and other forest enemies;

Reforestation, natural growth and tree-planting;

Forest reserves and parks;

Forestry schools in Canada;

Experience of foreign countries in various branches of forestry.

Minerals The work of this Committee has followed the suggestions laid down in its report to the First Annual Meeting of the Commission.

In February, Mr. Dick, the Mining Engineer for the Commission, visited the Cobalt district for the purpose of ascertaining the state of efficiency of the principal mines in utilizing the ores mined. In dealing with this subject, Mr. Dick also visited the chief smelting works in Canada treating Cobalt ores, viz., those at Deloro, Thorold and Copper Cliff. A report was submitted on these showing the efficiency attained in extracting the mineral content from the ore. In the forthcoming report, a section will be devoted to wastes in the mining, milling and reduction of minerals.

In further pursuance of the recommendations of the Committee on Minerals a report containing much valuable information on minerals has been prepared for publication in the next report of the Commission. In it will be given a synopsis of all the mining laws of Canada (Provincial and Dominion); a compilation of statistics relative to the known mineral resources of Canada; the annual production of minerals in each province or territory; together with information relating to mine accidents and the means taken by other countries to prevent them. This information will be supplemented by maps and charts showing graphically the significance of the statistics compiled.

Waters and Water-Powers The Committee on Waters and Water-Powers, at the First Annual Meeting, recommended:

"That steps be taken to obtain and tabulate complete information on the subject of the waterways of Canada so far as available information goes, and, wherever practicable, that such information be supplemented by examination and inspection.

"That this information comprise statements of the development of powers which have taken place, their scope and the market therefor, the amount used by the public and the rates charged.

"That, for the use of the Committee on Public Health, information should also be collected showing how, and to what extent, the watercourses are being contaminated by drainage."

At the same meeting, the Commission declared by resolution that there should be, in future, no unconditional titles given to water-powers, but that every grant or lease of powers should be subject to the following, among other conditions:

1. Development within a specific time.
2. Public control of rates.
3. A rental with the power to revise same at later periods.

In accordance with the instructions contained in the foregoing, steps were taken to collect the required information.

In June, Mr. Denis, the Hydro-electric Engineer of the Commission, went to Quebec and the Maritime Provinces to ascertain the progress made by the District Engineers of the Public Works Department. It should be stated that, prior to the appointment of the Commission, the Department of Public Works was requested to procure, through its District Engineers, all over Canada, as much information as possible respecting the waterways and water-powers of the Dominion.

Previous to Mr. Denis' departure, no reports had been received from any of these officials. Later, one covering the whole of Ontario was received from Mr. Hunter, Deputy Minister of Public Works. The District Engineer at Toronto, when instructed to prepare his report, recommended that Mr. A. V. White, of Toronto, be employed to give his whole attention to the particular work in hand. Mr. White, therefore, had had nearly a year to collect and digest the material and the result was that through the good offices of the Public Works Department we received a comprehensive report giving all the available information concerning the province of Ontario.

Mr. Denis interviewed all the District Engineers of the Public Works Department, indicating the lines of investigation desired and methods of work recommended. After his return to the office, he devoted his attention to the water-powers of Quebec and has compiled all available information respecting the water-powers of that province.

In addition to this work, circular letters have been sent to every civil engineer in Canada requesting him to contribute any information that he possessed regarding water-powers. The superintendents of all water-works have also been requested to fill in forms that will give full information in reference to their plants.

As the information respecting water-powers in the Maritime Provinces was very defective, Mr. A. V. White was detailed in September to proceed to Nova Scotia and gather information concerning the powers in that Province. This was done and a beginning was

made in New Brunswick before operations were closed by inclement weather. These results will be incorporated in the forthcoming report.

In August, the Secretary, Mr. James White, left for the West to attend the Irrigation Convention at Kamloops and, while in British Columbia, made it a point to visit some of the more important water-power developments there and procure whatever information regarding them that was to be had. This will be included in the report on water-powers soon to be issued, together with available information concerning the powers of the Prairie Provinces.

The Report will also contain a chapter on Irrigation which will set forth in a concise manner the character and extent of the principal irrigation projects in the Western Provinces.

**Fisheries,
Game and
Fur-bearing
Animals**

The Committee did not meet during the year and consequently no scheme of work was mapped out. Under the circumstances, the officials of the Commission have proceeded with investigations along the lines which appeared to them most immediately useful. No person could be assigned exclusively to the work, but the Assistant Secretary and Editor, Mr. Patton, has been giving to it as much of his time as could be spared from his regular duties. He has prepared the following:

1. Memorandum on the Jurisdiction of the Dominion and Provincial Governments in Fisheries Matters.

This is an analysis of the clauses relating to fisheries, of the British North America Act as affected by subsequent legal decisions.

2. A summary of the principal Dominion and Provincial Laws and Regulations respecting fisheries.

3. Statistics* showing

(a) Production of chief commercial fish in Canada as far back as figures are available.

(b) Production by provinces and species, of fish in Canada during the past year.

4. Report on the Canadian Oyster Industry.

This is a comprehensive review giving the history of oyster production in Canada, the conditions that have produced the present de-

* These statistics have been given in terms of weight instead of value, so that rising prices could not hide the true condition of the industry.

pleted state of the industry, the existing legislation, a statement of the jurisdictional dispute between the Dominion and the provinces and an opinion on the measures that need to be adopted immediately to rehabilitate the industry. Appended to the report are tables and charts showing the oyster production in the Dominion and in each of the oyster-producing provinces since 1871.

5. A general review of the character and extent of the fisheries of each province.

The aim is to have a series of papers giving a fairly good idea of the character and extent of the fisheries of each province. A statement of the Chairman of the Commission, outlining on what points information in this respect was desired, was sent out to the members of the Fisheries Committee last summer. In reply to this, the province of British Columbia sent in a very full description of the fisheries of that province, and this will be incorporated in the forthcoming report. Descriptions to be sent in by the other members of the Committee will also, it is expected, be included in the report.

The questions of fish culture and of dealing with the whitefish problem will, it is hoped, be dealt with.

**Press and
Co-operating
Organizations**

The publicity work of the Commission, which is under the direction of this Committee may be briefly outlined for the past year as follows:

I. REPORTS.—(1) Twelve thousand five hundred copies of the First Annual Report embodying the discussions at the First Annual Meeting, and also the addresses on conservation subjects delivered there by experts, were printed for distribution. With the exception of a few hundred copies the whole edition has been distributed.

(2) Twenty-five hundred copies each of Dr. Hodgetts' address on "Pure Water and the Pollution of Waterways" and of the Report of the International Commission on the Control of Bovine Tuberculosis, were printed and distributed. These were published in booklet form for presentation to the Dominion Public Health Conference at Ottawa on October 12th and 13th.

(3) Two reports are now in preparation on:

- (a) The Water-Powers of Canada.
- (b) General Conservation.

This will include the results of the investigations of each of the Committees except that on Waters and Water-Powers.

II. PRESS BULLETINS.—For a time these were issued monthly or semi-monthly for the use of the Press, and were sent to every newspaper and periodical in Canada. They contain short “ready made” articles on conservation topics, suitable for both editorial and news columns. It is gratifying to note that the press has received these very favourably and has used them extensively.

Latterly it has been found impossible to issue these on account of the largely increased amount of work the staff has been called upon to do as the Commission and its work becomes more widely known to the public. The Editor’s time has been wholly taken up by the preparation of the forthcoming reports of the Commission, by his duties as Assistant Secretary and by his being assigned the preparation of the report on fisheries in one of the forthcoming volumes. It is hoped that it will soon be possible to give more time and attention to this important branch of the publicity work.

III. THE PUBLIC PLATFORM.—The Committee in its report at the First Annual Meeting recommended that the members of the Committee arrange for public meetings in their respective provinces, to discuss Conservation. During the year the Chairman of the Commission has addressed Canadian Clubs, Boards of Trade, Forestry Conventions, University Societies, etc., at Halifax, Fredericton, Montreal, Ottawa, Brockville, Kingston, Peterborough, Toronto, Hamilton, St. Catharines, Brantford, Galt, Berlin and London. While the Secretary of the Commission spoke on “Conservation” at the Irrigation Convention at Kamloops, B.C., last August.

Addresses were also delivered at various points by the Chairman of the Press Committee, Mr. MacKay, and by Dr. J. W. Robertson who, in his tour with the Technical Education Commission, embraced several opportunities to make known the character and nature of the work being done by the Commission of Conservation.

IV. MISCELLANEOUS.—Besides this, numerous other methods have been utilized to bring the work of conservation before the public. Numerous enquiries from trade journals, newspapers, encyclopaedias, scientific societies and writers for magazines have been answered, while the Editor has contributed to magazines several articles dealing with the work the Commission is doing and has planned to do.

OPINIONS GIVEN, 1910

The Commission of Conservation is frequently called upon to give an opinion on pending legislation and various projects in which the conservation of natural resources is concerned. The following is a short résumé of each of the proposed undertakings reported on in 1910:

I. Damming the St. Lawrence This is a project, proposed by a group of American capitalists, for damming the St. Lawrence river at the Long Sault rapids near Cornwall. At this point in the river there are several islands and, by constructing dams to connect these, the river could be utilized for power purposes at a minimum cost. The proposed works would provide, approximately, 600,000 H. P., only about one-sixth of which would be developed on Canadian soil.

The St. Lawrence being an international stream, the capitalists interested had to get the consent of both the Canadian and the United States' Governments to their scheme.

UNITED STATES LEGISLATION.—The Bill to incorporate the Long Sault Development Company was passed by the New York Legislature in 1907. Further legislation to enable the Company to construct works under this charter was introduced in the House of Representatives of the United States, December 14, 1909, and was referred to the Rivers and Harbours Committee. By them it was referred to the International Waterways Commission for report.

CANADIAN LEGISLATION.—The St. Lawrence Power Company (which has passed under the control of the Long Sault Development Company) was incorporated by Act of the Dominion Parliament, May 23, 1901. By a provision in this Act, the plans of the Company had to be approved by the Governor in Council, and, accordingly, plans were submitted, for approval, to the Dominion Government. The matter having been referred to the International Waterways

Commission, the Government has deferred decision, apparently until such body reports. An act of last session now requires that the plans must be laid before and approved by Parliament.

OBJECTIONS OF COMMISSION OF CONSERVATION.—The Commission of Conservation was requested by the Canadian section of the International Waterways Commission to report upon the undertaking. The Executive Committee of the Commission of Conservation met on February 2, 1910, and authorized the Chairman to prepare and submit a memorial expressing the opposition of the Commission to the project. This memorial was read before the International Waterways Commission at Toronto on February 7, 1910.

The main objections urged were as follows:

1. Canadian interests are given a minimum consideration in the Company's plans. Of the total available development of 600,000 H. P. only a small portion (one-sixth) would be developed on the Canadian side of the river.

2. The Canadian market cannot at present absorb its half of the proposed development, and should power be exported to the United States, the vested interests it would create there would prevent its subsequent withdrawal to meet the future needs of Canadian industry.

3. The Company proposes a new channel for navigation on the American side of the river, the approach to which would be beset with dangerous currents.

4. If permission were given to build the dam, not only would it be exceedingly difficult for Canada to proceed with the deepening of the navigable channel of the St. Lawrence, but an all-Canadian route from lake Superior to the ocean would become a dream of the past.

It may be added that on January 9, 1911, the Rivers and Harbours Committee of the House of Representatives heard the representations of interests for and against the project. Subsequently the two Bills of the promoters were defeated by Congress.

It was the bill to incorporate this company that gave the House of Commons its all-night sitting last session. From those named as incorporators, there was no doubt that the same interests that were behind the scheme for damming the St. Lawrence were also those most con-

II. St. Lawrence
Power Trans-
mission Co.

cerned in the incorporation of the St. Lawrence Power Transmission Company.

The House of Commons amended the bill, so that the company could neither acquire water-powers, generate electricity nor export it from the country. Moreover, it was stipulated that all plans of works proposed to be erected by the Company, would have to be submitted to the Governor in Council for approval, while the Governor in Council could not approve of any further works for damming the St. Lawrence river by the St. Lawrence Power Company unless the plans and specifications for the same had first been submitted to and approved by Parliament.

In the Senate, the bill was further amended by striking out the clause to the effect that the works proposed by the Company were for the general advantage of Canada.

**III. International
Waterways,
Canal and
Construction
Co.**

The Bill to incorporate this company was introduced on January 25, 1910. The incorporators asked for exceedingly wide privileges and concessions, the bill, as originally introduced, giving to the company practically entire control over the waterway, and the water-powers thereon, from lake Superior to the headwaters of the Saskatchewan river. The attention of the public was called to the serious consequences of the passing of such a bill, by the Chairman of the Commission of Conservation in an interview to the press, in which he condemned the bill in unqualified terms. The main objection cited was that the undertaking from an engineering point of view, if at all feasible, was only possible at a tremendous cost and that the whole scheme appeared to be without *bona fides*, i.e., it seemed to be merely a cloaked attempt to monopolize the water-powers along the route of the proposed canal.

The Chairman of the Commission of Conservation was also summoned before a sub-committee of the Railway Committee to state his opinions on the bill. This Committee first eliminated the clauses conferring water-power privileges on the incorporators and finally threw out the bill as a whole.

**IV. Nelson
River Railway
Co.**

This bill was to incorporate a company to build a railway from the northern extremity of lake Winnipeg, to connect with any railway connecting existing railways with Hudson bay, and, in its original form, would

have conferred extensive water-power rights upon the Company, including the right to acquire the Grand rapids of the Saskatchewan, the most valuable power near the settled area between lake Superior and the Rockies. At the instance of the Commission of Conservation, the bill underwent important modifications. The bill as passed allows the Company to acquire (but not by expropriation) and develop water-powers on the Nelson and Saskatchewan rivers, if these are necessary for the purposes of its undertaking. It may sell its surplus power, but the rates charged have to be approved by the Board of Railway Commissioners, who may revise such rates and charges from time to time.

**V. The
Nipigon-
Albany Canal
and Transport-
ation Co.**

(Senate Bill GC)

The ostensible purpose of this proposed company was to construct a canal from Nipigon bay on lake Superior *via* lake Nipigon to the Albany river and from there to James bay. In reality, however, the bill contained clauses that might have alienated the water-powers of the Nipigon, Ombabika, Ogoki and Albany rivers from public control. It was a similar bill to that for incorporating the International Waterways, Canal and Construction Company and doubtless as a result of the fate of this latter, it was not reported.

**Export of
Power at
Fort Francis**

The Commission of Conservation, in this case, reported on the advisability of the Minister of Inland Revenue issuing a license to the Ontario and Minnesota Power Company to export to the United States power developed on the Canadian side of Rainy river at Fort Frances, Ontario. The Company claimed to have 7,000 H. P. of electrical energy developed on the Canadian side where, it was alleged, there was practically no market for it, and in January asked for permission to export this to the United States, with the exception of 1,000 H. P. When the matter first came to the notice of the Commission, the Railway Commission had approved of the exportation and fixed the rate. At this stage, protests were received by the Commission from Fort Frances and other municipalities. On February 2nd, the Executive Committee of the Commission met and passed a resolution recording its opposition to the export of power. On May 23rd, the Committee on Waters and Water-Powers met to hear arguments on the case, from both those favouring and those

opposing the exportation. No action was taken as a result of this hearing. The Government subsequently sanctioned the issue of a license valid for one year, permitting the Company, under certain conditions, to export to the United States approximately 3,500 of the 7,000 H. P. developed on the Canadian side.

DOMINION PUBLIC HEALTH CONFERENCE

The Standing Committee of the Senate on Public Health and Inspection of Foods in their third report, dated February 18, 1910, state, in regard to the pollution of waterways by sewage and wastes, that,—

“After hearing and carefully considering the evidence, your committee cannot fail to see that the public health of Canada is being considerably imperilled by the present custom of disposing of sewage, garbage, etc., into the lakes, rivers and streams of the country.

“Your committee is of the opinion that the only remedy, and the only safeguard, lies in the passage of legislation to control it. The legislation to be effective must be uniform throughout the whole Dominion, and can only be brought about by co-operation between the Dominion and Provincial Governments.

“It is, therefore, recommended that the Commission of Conservation, representing, as it does, all the Governments in Canada, be requested to call together the Health Authorities of each province to meet them in conference at an early date, and endeavour to devise means whereby this end may be attained.”

In accordance with this recommendation, the Public Health Committee of the Commission on October 12 and 13, 1910, called a conference at Ottawa at which were represented the public health officials of the various provinces, Dominion officials connected with public health administration and the Public Health Committee of the Commission of Conservation.

Those present were:

Senator L. Geo. De Veber, Chairman, Standing Committee on Public Health of the Senate.

Hon. Clifford Sifton, Chairman of the Commission of Conservation.
Members of the Committee on Public Health of the Commission:

E. B. Osler, M.P., Chairman.

Hon. Sydney Fisher, Minister of Agriculture.

Dr. H. A. Beland, M.P.

Dr. Chas. A. Hodgetts, Medical Adviser of the Commission.

Dominion Government Officials:

Dr. F. Montizambert, Director General of Public Health.

Mr. Gerald Brown, Assistant Deputy Minister of Labour.*

Dr. P. H. Bryce, Chief Medical Officer, Immigration Branch.

Major Lorne Drum, Permanent Army Medical Corps.

Dr. A. McGill, Chief Analyst, Department of Inland Revenue.

Dr. C. H. Higgins, Pathologist, Central Experimental Farm.

Provincial Health Officers:

Dr. L. E. W. Irving, Alberta.

Dr. C. J. Fagan, British Columbia.

Dr. R. W. Simpson, Manitoba.

Dr. E. Bayard Fisher, New Brunswick.

Dr. A. P. Reid, Nova Scotia.

Dr. J. W. S. McCullough, Ontario.

Dr. H. D. Johnson, Prince Edward Island.

Dr. M. M. Seymour, Saskatchewan.

Mr. E. M. Wood, Manitoba.

Dr. G. D. Porter, Associate Secretary of the Canadian Society for the Prevention of Tuberculosis.

Wednesday's Session

The Conference opened at eleven o'clock in the morning, Mr. E. B. Osler, M.P., Chairman of the Committee on Public Health, presiding.

MR. OSLER: Gentlemen, Mr. Sifton will address you.

Hon. Clifford Sifton, Chairman, of the Commission of Conservation, addressed the Conference as follows:—

Mr. Chairman and Gentlemen:

This meeting has been called by the Committee on Public Health of the Commission of Conservation, of which committee, Mr.

* Mr. F. A. Acland, Deputy Minister of Labour, was unable to be present at all of the meetings, and on those occasions he was represented by Mr. Gerald Brown.

Osler is Chairman. He has been the moving spirit in the organization of the committee, in the appointment of our Medical Adviser, Dr. Hodgetts, and in the proceedings that have led up to this Conference. He will be the presiding officer of the Conference, and matters will be under his direction. It was thought that I might say a few words as Chairman of the Commission, giving my own ideas in a practical way as to what ought to be achieved by this Committee. The principal idea that I wish to emphasize is that this is a business meeting and not a scientific conference, although it is quite probable you may have to discuss some subjects of a scientific character and probably endeavour to arrive at conclusions on some points not altogether clear. But primarily, it is a conference called for the purpose of achieving some business results. It will not accomplish its purpose if you gentlemen merely meet, deliver your opinions and go away. Perhaps we will be somewhat wiser for the deliverance of your opinions, but we will not be any nearer the results we desire to achieve. What we desire to achieve, and what, if it is achieved, will make this the most important conference ever held in Canada upon the subject of public health, is something in the nature of a practical step towards the achievement of certain ends.

Let me specify what I mean more particularly. On the question of tuberculosis, there has been a great deal of philanthropic effort by individuals, by associations, and, in some cases, by governments and municipalities; but so far, there has been no concerted national attempt to deal with the evil. Speaking generally, I think we have health administrations of a very effective character throughout the Dominion of Canada—local, municipal, provincial, and national, but they have no effective machinery for grappling with this evil on a national scale. The opinion has been expressed, and it is an opinion with which I fully agree, that if proper machinery could be provided, which reasonable men would believe to be effective, or likely to be effective, Parliament would be prepared to appropriate the necessary funds to provide for the expenses and to meet the cost of administration. I think that is correct. I think it is equally correct that, unless a plan which seems to be effective to business men can be provided, Parliament would decline to vote any money. I do not think, for instance, that Parliament would regard it as satisfactory if this Conference passed a resolution saying there ought to be a Department of Public Health to deal with tuberculosis, to be under the adminis-

tration of such and such a minister. Parliament would think, and I myself, as one of the members of Parliament would think, that a conference of medical men, who have been dealing with health questions as their life work, ought to be able to provide machinery with some degree of detail, with which a minister could proceed to deal with this question. How he is to deal with it, what machinery he would require, how to go about it; I think these are questions that it is incumbent upon you to answer with respect to tuberculosis. If you can devise a system whereby the national Government can deal with the question of tuberculosis, for which the House of Commons will be willing to provide a reasonable amount of money, then this Conference will have accomplished something. That is my view, is it not yours, Mr. Chairman?

MR. OSLER: It is, without any doubt.

MR. SIFTON: Unless you can make it clear that you have thought out a line of action, the details of which are practically set forth so that they can be laid before Parliament, then I do not think it is any use to have any scheme laid before Parliament at all. If you can work out such a plan, very satisfactory results will follow as the result of your deliberations.

The subject of pollution of rivers and streams has received a good deal of attention in the last year, and we will all admit that it has not received more attention than it deserves. The subject has already been investigated by a committee of the Senate of which, I understand, our friend, Doctor De Veber, who is with us to-day, was Chairman. A considerable amount of evidence was taken; and that evidence was taken to make it perfectly clear that the question is one that demands immediate attention. During the past year, a number of things have arisen in connection with different municipalities which have drawn public attention more especially to this subject, and it only requires a moment's consideration to show how vastly important it is. If it is important in this country, with great water-courses like the Ottawa and the St. Lawrence, how much more important must it be in the prairie country with its few streams, narrow, easily polluted, and almost impossible to purify when polluted. In that western country, it is vastly more important than here, where Nature herself provides a remedy on a large scale.

We have a question which must be dealt with, and it is a question which gives rise to a great many administrative, legal and con-

stitutional difficulties. The navigable streams are under the legislative jurisdiction of the Dominion Parliament. Numbers of the other streams are under the legislative jurisdiction of the provincial legislatures. You have to consider these questions and study out a system whereby legislation can be effectively provided, and then work out some system that will be practicable. You cannot say: "Nothing in the nature of sewage shall be dumped in a stream." That would be a simple solution, but it cannot be done. You all know how difficult it is to arrive at any method to enforce any remedy which is practical and effective. That is a matter for you, as experts, to decide. A suggestion has been made—it seems to me to be an extremely practicable one—that the provinces should be asked, after the establishment of a proper system and proper regulation, to provide an efficient system of inspection, so that every plant that discharges treated sewage, or sewage supposed to be rendered innocuous by treatment, should be under inspection, in order that it might be determined with certainty that the regulations were being carried out. That is simply a detail, which struck me as necessary in any plan you might submit. It is but another illustration of the fact that whatever plan is adopted in reference to this question, will necessarily be complicated and require a good deal of consideration of detail and patience in working out.

There are other subjects in which I myself am interested and would be glad to have you give some attention to before you separate. One of these is the question of the growth of slums in the cities and towns of Canada. That subject is a specially important one in Canada at the present moment, because anybody who has given any attention to the growth of the country must have noticed that the development of slums in some of our larger cities is a distinct feature of the rapid growth of Canada in late years. Slums are found in Montreal, Winnipeg, Toronto and other cities. Winnipeg is a new place where there should be no slums if proper steps were taken. There is hardly a town of ten thousand in Canada that has not what is to all intents and purposes, a slum, a back yard of the town, where undesirable people live, and undesirable conditions prevail. These are the beginnings of slums. Once a slum gets a strong and healthy growth, it is impossible to remove it, because, no matter how great the efforts to transplant the people and house them properly, the slum population grows faster than any possible effort of a reme-

dial character. The only effective way to deal with the question is to deal with it before the condition becomes so pronounced, as to be incapable of being overcome. We have nothing in Canada, at the present time, that cannot be easily overcome by any kind of determined effort. Our larger cities, like Montreal and Toronto, have considerable difficulties now in the way of slums, but nothing that cannot be overcome by determined effort. We cannot perhaps, at such a meeting as this, do much more than talk about a question of this kind, but we can do something in the direction of arousing public opinion on the subject, so that it can be taken up and dealt with in an effective way by those in a position to do so. I would be glad if, at this Conference, the experience and capacity which we have here assembled, should exercise itself in helping to arouse public opinion on this very important subject.

For myself, as I have said, I have no official connection with the Public Health Committee, except that I am an ex-officio member of it as Chairman of the Commission. Mr. Osler will preside over your deliberations and it will be quite unnecessary for me to attend because the subjects with which you have to deal are so largely technical. However, when the time comes to settle your recommendations, I would be very glad to meet your sub-committee to give any assistance I can by way of consultation. I do not know much about medical problems of a technical nature; I know a little about the administrative and constitutional difficulties. In that relation I may be of some assistance when you are forming conclusions, and I shall be very happy to be at your service when the time comes.

MR. OSLER: It is needless for me to say that Mr. Sifton has put very concisely and clearly before you the objects of this meeting. There is no need, therefore, of my attempting to expound or amplify the subjects which will come before you. It will be necessary, if we are to accomplish anything, to confine the discussion to the point as much as possible, so I hope there will be no attempt at very long speeches or long discussions on the different subjects. Practical suggestions are what we require. Perhaps, the discussion of some of the papers will occupy our time to-day, and then to-morrow, after we have got down to work, the committees might be nominated to take up the different branches and see if we can formulate some recommendation to the Government on some of the points before us, that will be wise, and that will appeal to the practical business sense

of the Government, and of the House and the Senate. This is necessary in order that we may get the money needed to carry out the schemes recommended. To get money, as Mr. Sifton says, we must be able to show that what is suggested is understood by the men in charge, and is practicable and not too extravagant.

The paper by Dr. Hodgetts is the first on the list and I would ask him to address you.*

Pure Water and the Pollution of Waterways

DR. HODGETTS: *Mr. Chairman and Gentlemen,*—It was not with any intention of reading this paper to the members of this Conference that it was prepared. It was more with the idea of being able to present the subject to all those who would have to consider lines upon which legislation would be ultimately devised in regard to this important matter of the pollution of waterways, and the protection of water supplies, that the pamphlet was compiled. It was only at the last moment that the Secretary of the Commission suggested that it should be printed and placed before the members of the Conference to-day.

There are, however, a few points to which I would like to direct attention. The subject is taken up under the heads of non-navigable waters and navigable waters. The question of the pollution of these waterways is one that is receiving the consideration of the people of the United States, and on page 7 of the pamphlet you will see the resolution of the Lake Michigan Water Commission in reference to a matter which has been considerably discussed, viz.: the effect of sewage upon water intakes, as affected by the predominating currents.

Then in Table A on page 9, statistics respecting typhoid, have been collated in the form of a table.

* This address was published in pamphlet form and was placed in the hands of the members of the Conference.

These figures have been obtained since I have been in office and the returns have been received through the kindness of the health officers of the cities of Canada. They are presented here in a readily understandable tabular form. The line here* of 20 per 100,000 is considered now to be the one which indicates that there is a sewage polluted water supply. I may say that only in the case of cities that have reported have I compiled any results myself, and then only in cases where estimates of population as well as deaths from typhoid have been given, so that there may be no quibbling in regard to any figures I have myself compiled. Some of these I cannot explain. This one at Fort William where 96 deaths occurred in one year in a population of less than 10,000 people was due to the breaking of the intake pipe of the city, and the city delaying to repair the pipe. Sewage got directly into the pipe from houses in which there were cases of typhoid, and the result was that there were 96 deaths and one person in every ten was down with the disease.

In Ontario, we have Ottawa and Toronto, which, in some instances, were below the twenty line, but in most of these cases, you have indications that there is either a constant sewage pollution or that there is hardly a safe water supply. This is particularly so in the province of Ontario.

In the next table is compiled the latest returns possible from twelve cities on the Great Lakes, from 1900 to 1908. These are on the same scale indicating the rate per 100,000.

TABLE B.—TYPHOID FEVER

Mortality rate per 100,000 of population, of the cities of the United States, bordering on the Great Lakes, 1900-1908 (inclusive)

CITIES	RATE PER 100,000 OF POPULATION BY YEARS.								
	1900	1901	1902	1903	1904	1905	1906	1907	1908
Ashtabula . . .	7.7	44.9	36.3	49.4	137.1	60.0	38.9	19.0	86.2
Buffalo	23.5	27.1	33.7	34.6	24.2	24.4	23.6	29.2	20.7
Chicago	21.1	29.8	45.1	32.1	20.2	16.5	18.3	17.7	15.3
Cleveland . . .	56.8	34.9	35.5	115.0	49.6	14.9	20.2	18.9	12.6
Detroit	28.4	20.1	23.5	20.0	17.6	21.2	22.3	28.3	22.3
Duluth	109.5	74.1	53.7	64.8	54.4	44.7	46.0	41.6	56.8
Milwaukee . . .	19.3	22.1	15.1	16.8	13.6	22.7	30.5	25.7	17.4
Niagara Falls . .	107.9	143.9	130.4	126.9	139.8	181.6	147.3	126.8	98
Ogdensburg . . .	55.4	20.4	95.0	54.2	60.9	40.5	87.6	40.4	33.6
Port Huron . . .	47.0	41.3	61.2	25.2	34.9	14.8	53.8	43.5	19.1
Sault Ste. Marie .	132.9	92.9	172.9	115.9	52.4	68.6	58.9	16.5	72.9
Toledo	41.0	32.2	34.7	29.5	37.2	45.7	45.0	36.4	40.1

* Dr. Hodgetts was here referring to charts graphically illustrating the typhoid death rates of various cities, which were compiled from the statistics given in the tables here published.

Notice the rate at Niagara Falls where the water supply receives the pollution of Buffalo and Tonawanda.

Here are the tables showing deaths from typhoid per 100,000 in different countries.

TABLE C.—TYPHOID FEVER

Death rate of nine countries, per 100,000 of population

YEAR GROUP	COUNTRIES	RATE PER 100,000 OF POPULATION
1901-1905.....	Scotland	6.2
	Germany	7.6
	England and Wales..	11.2
	Belgium	16.8
1901-1904.....	Austria	19.9
	Hungary	28.3
	Italy	35.2
1901 (census).	Canada	35.5
1901-1904.....	United States	46.0 (estimated)

Scotland is the lowest and the United States the highest with a rate of 46. These are all referred to in the pamphlet which you have. In regard to the countries of Europe, it is particularly interesting to notice, the population in relation to the area.

On pages 13 to 34, you will find a compilation of the laws of the various provinces, which I hope will be found to be as accurate as possible. Where there are any discrepancies I hope the Health Officers of the provinces will kindly correct me.

Coming to page 52, you will find that we have a compilation of the laws of the various states of the Union, particularly those dealing somewhat firmly with the question of pollution of rivers and lakes. Further on, the situation in Germany and Great Britain is dealt with.

In conclusion, I wish to emphasize the need of federal action, and shall quote the following paragraph from page 53 of the pamphlet.

"It is not contended that the dangers at present existing in the various provinces are identically the same either in degree or in fact, but there exist the same underlying principles in that provincial legislation alone will not solve the difficulties. It requires some other authority, viz., that of the Federal Government to deal with

them, particularly those of an international character. It will be for the Commission of Conservation to investigate the various watersheds, collecting all available data with the assistance of the several provincial and local health authorities, in order correctly to estimate the character, quantity and variety of the various pollutions at present existing and to ascertain their exact point of discharge and their bearing upon the present sources of water supply of towns and cities, both near and remote from the point of discharge; and further, to consider and recommend ways and means for the abatement of these nuisances, having always in mind that the health of the citizens of this country is paramount, but ever remembering the necessity for the fostering of agriculture and the development of manufactures."

MR. OSLER: This question is now open for discussion, and I am sure we will be glad to hear those who wish to speak on it.

DR. FAGAN: Mr. Chairman, as far as I am concerned, I could talk on the general conditions and the disposal of sewage in Canada at great length, but I could not discuss this paper, as I know nothing about it. I did not see it until yesterday, and have not had an opportunity of reading it. You also hinted that you would have the committees appointed to-morrow. I notice on the programme that our meeting ends to-morrow night. If I might make a suggestion, I would advise that you appoint your committees now and defer the discussion of this important question until we have had time to study it. Outside of the discussion of the paper, I think it is important and necessary that the committees should be appointed the very first thing, because otherwise, we will not have time to think out and prepare our reports. As the Chairman of the Commission inferred, we, as a body of medical men, are inclined to be too enthusiastic, and in that way we do injury to our cause by demanding too much. If our committees are not formed until to-morrow morning, we will not have sufficient time for discussion in the committees. I suggest therefore that committees be formed this morning on the subjects on which you want to have committees, and to-night and to-morrow we will have the opportunity of reading this paper.

MR. OSLER: That is a very practical suggestion, only it was thought that there might be a general discussion, not only of this paper, but of any subjects that anyone wished to speak on. We cannot expect that the committees that are struck to-day or to-morrow will be able immediately to present their practical plans, because that

would, of course, take some considerable time. It was rather proposed, I think at Mr. Sifton's suggestion, that it would be wise to have any general discussion take place to-day and then have the appointing of committees to take up the various branches. Personally, I am not capable of saying who ought to be on this committee, and who on that, and I think that Mr. Sifton would like to be here, and would also like to have Mr. Fisher here to get some suggestions from him. I think that was the object of postponing the naming of committees until to-morrow, but perhaps a nominating committee might be struck now to suggest the committees on the various subjects that are up for discussion, so that they shall not overlap.

SENATOR DEVEBER: The discussion of this question is one that involves, a great many legal points. I think probably one of the proposals in which we would all concur would be the forming of some central body in Ottawa that would exercise a general control. The Health Officers who are here, have to come from various parts of Canada, and I think it was, to a large extent, in order to get the feeling of the Health Officers of the different provinces, that this convention was called, so that we might learn whether the provinces would be willing to give up a certain amount of the right they are exercising, especially in regard to the pollution of streams, because to my mind, it is an impossibility for one province alone to do anything in regard to this. We have interprovincial streams and international streams; any two provinces on an interprovincial river would have to have identically the same laws and these would have to be carried out as effectively on one side of the river as on the other, in order to be effective at all. Then regarding international streams, everyone knows that no province can deal with a state, it must be a matter between the Dominion Government and the Federal Government of the United States. That question is one which would interest all of us equally, and we should carefully look into it, before we commit ourselves. I would like to see that discussion go over until to-morrow and to take up some of the others that would not be so broad and would not cover so many points. I think probably it is the most important matter before us.

MR. OSLER: Is there any one of these questions that you would like to take up now for discussion?

MR. WOOD: The provincial Board of Health of Manitoba prepared a short memorandum on this subject. I had not seen Dr. Hod-

getts' very able address until this morning, but on glancing through it, I do not see that we are any nearer a solution of the difficulty than before. I do not think that any suggestions are made as to how the different interests may be harmonized.

DR. HODGETTS: No, they are not.

The memorandum of the Manitoba Board of Health, on the prevention of the pollution of international, interprovincial and other waterways was then read by Mr. Wood. The statement was prepared by Dr. R. W. Simpson of Winnipeg, and was as follows:

This subject is one of wide range. Joint international and interprovincial action will be necessary to produce satisfactory results. Such conditions as will prevent the pollution of our waterways, will be admitted by almost everyone to be something more and more to be sought after. There will be, however, a class of people who will attempt to assert alleged rights to the detriment of the whole public. The means to make model conditions a reality, so as to preserve the right of all to enjoy our waterways, must be carefully worked out.

A mere retrospect brings the conviction that grave obstacles of an international and interprovincial character will first require to be removed. The law with respect to our waterways from an international point of view will require to be made the subject of conference with, and joint action by, the respective governments concerned. The attainment of more favourable conditions respecting the preservation of our waterways is only possible by the united action of all concerned and the methods adopted must be comprehensive and far-seeing. In so far as those waterways that lie wholly within one or more of the provinces of Canada are concerned, it is my view that a conference of all interested should take place, and the form of legislation necessary agreed upon.

In Manitoba, the prevention of the pollution of our rivers by wastes and sewage has become a serious problem. Our two main rivers, the Red and Assiniboine, have become sluggish, visible sewers, being made practically the emptying basins for sewage and offensive material. The conditions are particularly objectionable in the city of Winnipeg; so much so that, with the rapidly increasing population of the city, a very serious problem is presented that is becoming acute. All the sewage of Winnipeg is emptied into the two rivers named above, creating such conditions as are not only objectionable, but a menace to the public health. No doubt similar conditions ex-

ist elsewhere throughout the Dominion, and I am certain that they are unnecessary.

Surely, there must be some limit to the reckless pollution of our natural waterways. According to the law as it at present exists, there is apparently a prescriptive right to pollute running water and obstruct its flow, provided such abuse falls short of a public nuisance. Such right cannot and should not be classified other than as a privileged abuse. In the neighbourhood of cities and large towns, it has come to be thought that a river foul with sewage is inevitable, and it is the more difficult to abolish or limit the evil when the principal offenders are known to be the municipal governing bodies. Rich and poor, therefore, calmly view the existence and perpetuation of the nuisance and submit to it as a sort of destiny. In my opinion, the prevention of this gross pollution of our waterways by wastes, sewage and refuse of all sorts can only be overcome by the most drastic legislation, which should be uniform throughout the Dominion, and should serve as a guide in cases involving international interests.

MR. WOOD: That, shortly, is the view we take of this matter in our Province. It does seem to me that the question is so broad that it is going to take a considerable time to find a solution. The provincial governments certainly have jurisdiction over certain streams and so has the Dominion Government, and as the Doctor said, we have to consider international interests. The matter is very important, and it seems to me that it is going to be very difficult to find a solution of it.

MR. OSLER: Mr. Sifton suggested that perhaps the general discussion might take place to-day, and then committees might be formed to take up the various questions and try and put into concrete form some scheme that could go before Parliament. It has been suggested that a general discussion will amount to nothing and that committees should be formed now.

HON. SYDNEY FISHER: I think that it is certainly the wise course to have a general discussion to-day. After that discussion we would be able to judge who would take most interest in each individual committee.

MR. OSLER: Is it the opinion of the meeting that there has been enough discussion on that point now, and that we should take up something else?

DR. BRYCE: It seems to me that before we leave the subject, we might get a little nearer the details of this very important question. One naturally refers to the work that has been done in other countries, in order to see what seems possible to be done. The question is whether we should continue polluting streams as we have been doing heretofore. It will become largely a practical question as to whether it is a navigable stream or a non-navigable stream; whether water supplies are being polluted or whether it is a non-navigable stream which, by proper local methods, can be kept pure. Supposing we take the St. Clair river at Sarnia as an illustration. The St. Clair and the Detroit rivers are the worst examples we have. I suppose there is not a minute, certainly not five minutes during navigation, that there is not pollution of the stream, by a large vessel going up or down. It seems impossible to prevent pollution of those streams. The next question is whether the pollution from the vessels makes the purification of the water supplies of the district necessary, and the third question is whether we can enforce a certain degree of purification upon the towns which are polluting the river at present. In dealing with a case like that, it occurs to me in this way that it is quite possible, supposing we had the machinery, to supply all the towns on the St. Clair river, which is about thirty miles long, with water from a source above, that is from lake Huron, which is so great that it is not polluted. The same plan would possibly work in the case of the Detroit river, although it would not be so effective, because the settling basin, lake St. Clair, is much smaller than lake Huron. At Niagara Falls, there seems to be one solution only, that is to go to the great settling basin above, and supply the towns on both sides with pure water, and make them, as far as possible, pour only non-putrescible sewage into the river. I say this principally because in England all the most recent discussions have ended with the one conclusion, viz., that in sixty years of work there, it has not been possible to devise any method of purification that has made a stream so pure that it can be used for drinking purposes without filtration. So in connection with three great streams in this country, the St. Clair, the Detroit and the Niagara, we have the problem whether or not it is possible to bring down water supplies on the two banks from the settling basin, and make the towns put in reasonably effective methods of purifying sewage. That is the gist of the question we are going to discuss. How far we can get the different governments

to act in concert, how far we can get the provinces, the Federal Government and the state governments to unite in doing these things, is of course, not a matter that we can decide at all, but I do say that we ought to be perfectly clear as to whether we can do these things and how much it will cost to do them. When that is settled, we can discuss whether we shall ask Parliament to go into such a question.

DR. SEYMOUR: I have prepared a memorandum on what has been done with sewage disposal in Saskatchewan. The problem with us is extremely important. The water supply of Saskatchewan is a decidedly limited one, and therefore we are making every effort to purify the streams. Dr. Seymour then read the following paper:

SEWAGE DISPOSAL IN SASKATCHEWAN

The problem of sewage disposal is an extremely important one in the province of Saskatchewan, inasmuch as, owing to the somewhat limited supply of water, prevention of its pollution becomes absolutely necessary. Our two most important supplies of water for domestic purposes are from the two great rivers, the North and the South Saskatchewan. Apart from these, we have to rely upon such water as can be obtained from small creeks, shallow underground sources and artificial reservoirs.

At the last session of the Legislature a Public Health Act was passed, containing important enactments dealing with the question of sewerage and sewage disposal. The passing of this legislation made it possible for the Commissioner to insist on the adoption of some method of sewage disposal. Upon my recommendation the Government appointed a Consulting Sanitary Engineer in the person of T. Aird Murray, of Toronto. I am very pleased to have this opportunity of acknowledging the valuable assistance which I have received from him in connection with the questions of sewerage and water supplies.

There is no absolute standard of sewage disposal plant insisted upon; each case is treated in accordance with its local conditions. The general objects in view are the removal of suspended solids, the prevention of any tendency to putrescibility of organic compounds and organic solids in solution and the removal of pathogenity. While the two first are generally insisted upon, it is necessary, for the reasons that I gave earlier, to insist in Saskatchewan upon the removal

of disease germs in order to prevent the possibility of water supply sources being polluted thereby. I think it is very much more important to take such action as above indicated, rather than rely upon purification of water supplies either by chemical treatment or filtration.

For further details with reference to the methods of sewage disposal I beg to refer you to the plans of the disposal works which are at present being installed in Regina and Swift Current.* I brought the plans of Regina as being an example of the works which are being put in for one of our largest cities, and those of Swift Current as an example of what is being done for the purification of sewage in our smaller towns. Works with a similar object in view are being put in in Saskatoon, Moose Jaw, Prince Albert and Yorkton, as well as in a number of other small towns. While these methods will practically conserve the purity of our water supplies, so far as local conditions are concerned, we are still endangered by the pollution of waters coming from the other provinces or from the United States, where no methods are taken to prevent their pollution. For this reason, the prevention of the pollution of water supplies must be dealt with both from an interprovincial and from an international standpoint, and I hope the result of this meeting will bring about action along those lines.

DESCRIPTIVE SUMMARY OF SWIFT CURRENT SEWERAGE AND WATERWORKS

POPULATION:

Population in April when work was designed.. . .	1,800
Present approximate population..	2,500
<hr/>	
Increase in six months..	700

WATER SUPPLY: The supply is obtained from the Swift Current creek, running adjacent to the town at a point one and a half miles above the town site. The quality is first class, and the quantity generous. A measurement of the flow taken in the driest season of the present year (this year being abnormally dry) gave three-quarters of a million imperial gallons flowing in the twenty-four hours, whilst measurements taken in March last showed twenty

* Dr. Seymour here referred to copies of the plans which he exhibited.

million imperial gallons flowing in the same period of time. The creek has not been known, in the recollection of old timers, to have ever run dry. Its supply is largely derived from springs.

DESCRIPTION OF WORKS: The water flows by gravity from a point under the creek bed (the intake being protected by gravel) through a 12 inch supply main into a concrete settling tank. This tank is divided into two compartments having a total capacity of 65,000 gallons.

The division is to enable the water, (should occasion arise to so demand) being treated by hypochlorite or other medium, before being distributed to the consumers, the treated water being drawn off into the second chamber of the tank.

From the tank, the water is pumped into pneumatic cylinders situated in the pump room of the power house, where it is further aerated, and from thence distributed to the town under a domestic pressure of 60 lbs. per square inch.

In the event of fire, direct pumping pressure can be obtained at 125 lbs. to the square inch, giving the town adequate fire protection.

Owing to the rapid growth of western towns, and the favourable location for expansion of Swift Current in particular, the water mains have been designed to give a capacity equal to the requirements of 20,000 persons.

The pumps (two in number) are of the turbine type, to be driven by gas engines from an up-to-date gas producer plant.

SEWERS AND SEWERAGE: The sewers have been designed on the separate sanitary system, reckoning a per capita water consumption of 40 gallons per 24 hours, and are to accommodate a population of 20,000 persons, the system north of the C. P. R. track being computed for 10,000 persons, and south of the track for another 10,000.

Owing to the topography of the town it was found necessary to raise the sewage at least one point as a gravity flow throughout was impossible of attainment. Therefore on consideration it was decided to reduce the size of the sewers, give steeper gradients with a corresponding self-cleansing flow, and raise or eject it at two intermediate points. The flow throughout averages from two to three feet per second.

The sewers are kept well down, in order to accommodate deep basements as the town grows, and are designed so that the shallowest sewers at the extreme limits of the present townsite, when constructed, will have a covering of nine feet.

This is an economical method also, as it permits of the iron water-mains being laid in the same trench as the sewers, but above the sewers. Water mains in this climate require a covering of eight feet.

DISPOSAL WORKS: The sewage is received in a screening chamber where sticks, rags or other foreign substances are caught and retained; it thence flows into collecting and distributing channels and over weirs into a sedimentation tank, where it receives a sixteen hour, or eight hour treatment.

The tank is a continuous flow tank but is designed to give a velocity of only one sixty-fourth of an inch per second, thus permitting a consequent deposit of somewhere near eighty per cent.

The floor slopes at 1 to 15 to gravitate the sludge to one end of the tank, from whence it is gravitated to the sludge beds for drying, previous to disposal in shallow trenches.

The effluent in the tank passes through circular openings in the dividing walls, under the water line, into an aerating channel where it is collected in a thin stream, and passed over a measuring weir on to the bacteriological filter.

The filter is rectangular in shape, of the bacteriological type, eight feet deep and composed of three inch crushed rock. The distribution is by means of Stoddart trays which are very effective for small systems and only require occasional supervision and attention.

From the filter the now non-putrescible effluent flows through a disinfecting, baffling channel into the creek, at a point about four miles below the fresh water intake. The water taken from the creek is used for household and other purposes, turned into sewage, clarified and purified, filtered, and finally returned to the creek in a non-putrescible condition.

The actual disposal works are covered in and roofed to avoid the rigours of our winter season, and it is anticipated that the latent heat of the sewage passing through the sedimentation tank will be sufficient to resist freezing in the filter, many tests from actual experience having shown a sewage temperature of 43° to 45° Fahrenheit within a closed tank in this climate, when the external temperature has been 40° Fahrenheit below zero. Should, however, our expectations not be fulfilled artificial heat by means of stoves will be adopted.

The cost of the disposal works when completed will be under \$10,000.00. They are designed as one unit for 2,000 persons. The

maintenance will need on an average the services of a labourer for about one hour per day. As the town grows additional units can be constructed, sufficient ground having been purchased for that purpose.

DR. HODGETTS: If I might be permitted to say a few words, it seems to me that first of all, we must come to a decision as a conference, that our waterways are polluted and that that pollution should stop in the interests of the public. That is manifest; wherever you go, all through Canada, you see water supplies polluted. Next we come to the question, how this is to be stopped, and we must ask ourselves, in reference to the provincial laws now existing, whether or not they are themselves deficient, and if the laws are efficient, whether they are being properly enforced. Speaking for Ontario, I feel that the laws are not efficient. We have the evidence before us, and I know myself that systems have been installed before the plans had ever been submitted to the provincial Board of Health. Further, there was no power under the Act by which you could get at the municipality. So far as I can see, the one and only province that has a hold on the municipality is Saskatchewan, and that Province got it through the purse strings. It is unlawful for a municipality there to issue debentures until they have the signature of the health authorities. That is the one way of getting at them.

Then, it is evident that provincial authorities must deal with the question of sewage pollution, with the treatment of sewage within the provinces, and also with the protection of their water supplies. Then there are questions that are interprovincial and international. They must be dealt with, we are all convinced of that. How is that to be brought about? By some special law, or by an addition to some existing law? That is a matter for this conference to discuss and then to make recommendations. I may have my own personal opinions, but personally, I have not had time to study the question all over the Dominion. I am open to suggestions and to hear from the representatives of the different provinces as to what the conditions are in their own particular provinces. We must get at it in that way. It is not a question exactly of supplying the cities with pure water, although that is our ultimate purpose, but we must stop the present pollution. We must have some suggestions as to how that is to be done. It seems to me it is only by some federal enactment that navigable waterways can be dealt with, and whether that is to be by a special

act of the Dominion Parliament or by an addition to some existing act is, I think, a matter for consideration. Certainly we cannot, as a people, discuss the pollution of the international waterways until we have put our own house in order, and then we can go to the various states and to the United States Government and say: Gentlemen, this is what we are doing. Now we want to have something to indicate that you are going to do likewise, and protect yourselves and ourselves at the same time.

DR. SIMPSON: We have listened with great interest to the discussion, but I do not think we are arriving very quickly at any solution of the matter. We have all agreed that the streams of this province and others are polluted, and something radical must be done to correct this condition of affairs, not only in interprovincial, but in international waters. Dr. Bryce has made a few suggestions which can be carried into effect, but to discuss this matter before this Conference to-day is more or less, I think, a waste of time. My suggestion is that we strike a committee to deal with this matter and put something into concrete form by which we can come to some conclusion and place it before this Conference with the object of having it adopted. If we go on discussing this matter as we have done this morning, we are only saying that such a thing does exist, but we are offering no remedy. Instead of being able to conclude our business to-morrow evening, we will be here until next week. My suggestion would be to strike a committee to bring in a report with suggestions as to what might be done in regard to the matter, and place it before the Conference in concrete form, to be dealt with.

DR. FAGAN: I thoroughly agree with Dr. Simpson. We have heard with great interest, and no doubt with instruction, what my friend Dr. Seymour has said, of what they are doing in Regina and Swift Current. We have heard how water can be taken out of the river, passed through their sewage system, and passed back to the river in perfect condition. The people of Regina are to be congratulated and I think we should pass a vote of congratulation to them on having such conditions as exist there. I do not think they exist anywhere else in Canada. At the same time, we are not here for that. We are here for a bigger purpose, and the fact that we are not here for any length of time leads me to appeal to the Chairman to abide by Dr. Simpson and myself in the position that something of a definite character ought to be done. We cannot deal with these different ques-

tions as we ought to, but we have made a start, and I would like now to congratulate the gentlemen at the head of this Convention. I think it is the greatest step Canada has yet taken. I think they have come to realize the importance of this question of health. The people as a rule do not realize it, they do not see the pressing importance of remedying the existing conditions, and we all know that the conditions existing to-day, if they are permitted to continue, without the application to such problems as the existence and growth of slums to which Mr. Sifton referred, of the scientific knowledge which we possess, would lead to such a loss of life as one can hardly bear to think of. I believe, if we use our knowledge and present our views to the Government, improvements will be made that will be a credit to the country. We should, however, make the proceedings of a little more definite character.

Each of the provinces should know what is going on in the other provinces, not through this Committee, but through arrangements which might be made with the health authorities of the different provinces to interchange their knowledge with the Director General of Public Health. He should keep us informed of what is going on in different parts of the world. To-day, there are serious conditions in the States adjoining my Province, but I do not know them. I think it is the duty of this Government to supply us with that information. We are threatened with cholera, and although I am on the sea coast, I do not know anything of the conditions in China. I think it is the duty of certain departments in the Government of Canada to keep us informed of that, and I have no doubt they would be willing and anxious to do it.

Then there are the people who enter Canada. People come into British Columbia, but I do not know anything of their condition. I do not think that is right. These are questions with which this Conference ought to deal. Thousands of people come by boat and land on both coasts of Canada, and disease must come in there. The Dominion authorities have two methods of looking at these people, while the local authorities know absolutely nothing about the conditions. I do not think that is right. If I might make the remark, in the presence of Hon. Mr. Fisher, a man of enthusiasm who looks after his department with great zeal, I would say that we have two institutions relating to immigration which merit attention. I refer to the quarantine inspection and the inspection of immigrants.

This dual inspection brings the whole question of administration of public health into discredit, so that it is rather laughed at. Immigrants come before Dr. Montizambert's officers for examination, they are then examined by Dr. Bryce's officers, and one will pass them and the other stop them. Such a condition prevailing in Canada is a laughing stock among the people. I say this before Mr. Fisher who takes a deep interest in such questions. These are the questions we ought to discuss, not what we are doing individually in each province. These are matters of importance, and resolutions on them coming from a Conference of this kind, would be of effect.

I wish to refer also to the question of pure food. I am glad to see present Mr. McGill, a man of whose scientific attainments Canada has reason to be proud. On this question of food, there is practically nothing being done. I know the conditions with us are a disgrace to a civilized country. There are jams and jellies that are not jams and jellies at all. Then there is that question of the supply of milk. We in British Columbia have our hands held up. We had a prosecution in one of our cities for supplying milk that was not up to standard. The offender was brought before a magistrate and fined \$100. The judge reversed that decision and said the Province had no power to act in the case. He said it was a federal question and it was held by the Supreme Court of British Columbia that it was a question for the Dominion Government to handle and that the Provincial Government had no power to deal with it. We simply had to stand by while hundreds of deaths occurred this summer. Here then is a question which this Commission could have great influence in pressing on the Government to settle definitely and speedily. We are helpless, because if we bring a case before any magistrate, he will say: "Oh, the Supreme Court of British Columbia has decided that the Dominion must deal with this."

Another question of importance is that of sera and anti-toxin sera. I had the honour of speaking to Mr. Fisher personally about this, and he certainly lent a very kind ear to what I had to say. I also had the honour of bringing in at the Canada Medical Conference, a resolution calling on the Dominion Government to form a central station that would supply sera to Canada at a reasonable price. What has happened? There are people in Canada, and I have seen many of them, that simply use one-tenth or one-twentieth of the dose they ought to use, or do not use it at all, because the price

is so prohibitive, that I can readily understand why people do not buy it. So instead of twenty thousand units they use one thousand. This is practically all supplied by the United States, and what is happening with reference to the manufacture of sera there? The United States authorities look after the sera being supplied to the United States, while the doubtful product is shipped into Canada. We accept it, and there is no attempt made to examine it. I have examined some of it and found it wanting. I sent some of it to the Dominion authorities, six, eight, ten months ago, but I have not had an answer yet.

Then, again, in connection with the Indians, we have the same conditions as we have in reference to quarantine and immigration. They are a disgrace to any community. I tell you it looks to me—as a medical man I may say things that are a little enthusiastic, but I am speaking from my heart—it looks to me as if the Government was open to the charge of seriously neglecting these people. Tuberculosis is present in about eighty per cent. of them, and the Government of Canada, in British Columbia, is doing nothing. It is doing a whole lot in the North West, but in British Columbia the Indians are expectorating freely in the public streets of Victoria. They are living like the savages they are and spreading the disease. They are coming among our white people, and spreading the disease, but still the Dominion Government is doing nothing to prevent that condition of affairs. Here we have two or three departments, one looking after the white man, and the other after the Indians. Why not have all under one department, where they could handle the situation from a health point of view as far as the Government would give the money. These are points which I think this Conference might well put forcibly before the Government; their representations would be received with consideration, I know, and I think they would receive the attention the subject deserves.

I may have said some things that possibly I ought not to have said. I am not a politician, but I feel strongly on these subjects; the ideas I have expressed are the result of watching the condition of affairs in Canada for ten years. I think the conditions are very unsatisfactory, and I congratulate the people who are responsible for calling this meeting together. I do not make these statements with any idea of hurting any one, but I state them as facts and I do not think they will be contradicted. I hope the result will be that the com-

mittees will form resolutions and that they will be presented in proper form.

DR. JOHNSON: It seems to me that this discussion has branched out and been prolonged at greater length than we thought when we started to discuss subject number one, and although it is interesting to hear the remarks of Dr. Fagan, would it not be better to defer them until we reach subjects to which they are more relevant? Topics 2, 3, 4, and 5 are ready and, of course, they are all very important. The appointment of a committee on waterways is not one that interests me so much as the others, because I come from Prince Edward Island where we are not confronted with any dangers of sewage pollution, since we have to do only with tidal waters. But the other questions interest me very much. In the meantime, something must be done in connection with the discussion of polluting waters, and it carries along the same thing all through, that is, what are we to do? Our own idea of these things is that there must be some central organization which will have control of the whole matter of public health, a central board, if you like, with a proper system and some means by which every province will have the same laws and be under the same government.

One of the papers deals with the benefit to be derived from the formation of a Central Council. The formation of such a body may be the very means best adapted to cover all these questions, a separate council, whether consultative or administrative. I think, perhaps, it would be well, before we go further into the discussion, to have all the papers read and then we will know what we are discussing.

MR. MCGILL: I have listened, as I am sure we all have done, with a great deal of interest to Dr. Fagan's presentation of the subject, and I think his own address is perhaps as good an illustration as can be given of the desirability of the presentation of each subject in a somewhat definite shape, as the result of a committee specially appointed for its preparation. While we are presumably discussing the question of purification of waterways, the speeches that have been made this morning have wandered all the way from therapeutic serums to the adulteration of food. In reference to that last subject, I may be permitted to make one or two remarks. There is undoubtedly too much truth in the statements made by Dr. Fagan that the Adulteration of Foods Act has not been, in past years, as efficient as its promoters originally hoped it would be. I must, however, give

great praise to the department with which I am connected, the Department of Inland Revenue under its present head, for an important step which I believe ultimately is destined to make the Act more practicable than it has been in the past. The Act itself contained in its original form a clause which gives the Governor in Council power to define foods, to set limits of variability and to define them, but the fact that through the twenty-six years of its existence, this clause has never been acted upon, has caused the limitations in the power to enforce the Act. Nor is any one to blame for the fact that this clause has never been carried out; it required information that had to be slowly and gradually acquired through a series of years in order that we might feel safe in drafting regulations under that clause. I am not here to take up your time with a subject not immediately before us, in giving details of what has been done, but I may say that definitions and limitations are now before the Minister of Inland Revenue dealing with milk and its products, and grain and everything made from it, and I think that within a year, or at any rate within a short time, these will become law and we shall find that those jams that are not jams and maple sugar that is not maple sugar will be a thing of the past, or at any rate, can be practically and effectively dealt with.

MR. FISHER: Mr. Chairman, I think perhaps that what you want to do is to get some method of work by which this Conference can accomplish something definite. I consider myself that the first necessity, before making any recommendation, is to obtain a knowledge of the facts. This Conference can hardly make a recommendation unless it knows the exact condition of affairs in the country, and knows in what way the condition of affairs, where bad, can be remedied.

As far as the question of pollutions of streams is concerned, there has been an impression abroad in Canada, amongst the average lay public, that our rivers in Eastern Canada at any rate, were so enormous, that pollution by the comparatively small population in the early days of the country was insignificant and not dangerous. My own belief is that that condition of affairs is passing away, and that, in most of our rivers, pollution is dangerous to-day, and that even the mighty St. Lawrence itself may become polluted as population increases along its banks. I do not know myself, perhaps you gentlemen do, to what extent the waters of our rivers are polluted.

I do not know if analyses sufficiently numerous and accurate have been made throughout the whole country to enable us to say whether our waters have been polluted so as to be a menace to health. The statement was made at the Washington Conference, called a year and a half ago by the President of the United States and at which some representatives of Canada were present, by an eminent authority of the state of New York, that the whole of lake Erie had become so absolutely polluted that it was no longer what might be called a settling basin, but simply a sink of corruption. Whether that is correct or not, I do not know, but the statement was made, and seemed to be accepted by the large number of people there, who were interested very strongly in the health of the state of New York and the towns bordering on lake Erie. If that is the case, it follows apparently of necessity, that the Niagara river is polluted. The suggestion was made by Dr. Bryce that along the Detroit river, a supply can be got from the lake above, and I think by implication, a supply from lake Erie for the towns bordering on the Niagara river. If that statement of the state authority of New York is correct, that you would get only polluted water from lake Erie, then it would be impossible to take it from that lake. I cite this as an instance of the necessity of our getting the facts before we make recommendations.

These remarks refer to what I might call the practical scientific side of the question of our water supply. The other side is the question of constitutional rights or powers. We have had, in the Dominion Parliament, a number of cases which Mr. Osler will recollect, in which medical associations and other such organizations have been discussed. Members representing the different provinces have asserted, I think correctly, that there is a great deal of jealousy on the part of the provincial legislators, of any invasion by the Federal Parliament of their rights in reference to health legislation. The British North America Act gives the Dominion Government definite rights and powers as to health and quarantine, but when it comes to local or municipal affairs, the Act clearly relegates them to the local authorities. Whenever the Dominion Parliament undertakes to deal in any way with health, there is always a portion, at least, who point that out, and object to taking a step. So far, we have not done much in that way, but we have taken upon ourselves, through the Parliament of Canada, to appoint this Commission of Conservation, which was not intended to be, in any sense or form, a creature of the Dom-

inion Parliament alone, and for that reason especially, the provincial governments were requested to appoint members and the desire was to enlist the support and help of the provincial authorities. Suggestions have been made here already that the Dominion departments should do certain things. It seems to me that it is the business of the Commission of Conservation to do a good many of these things, for instance, getting information and supplying information as to what legislation, Dominion or Provincial, as the case may be, can be carried out. Until that information is obtained by some means or other, it will be impossible to pass legislation in any of the legislatures. General statements, broad general statements, arouse a certain amount of enthusiasm at the moment, but they do not pass legislation, and if I undertake to propose certain legislation in the House, it must be supported by facts to show the necessity of it. If my friends in the provincial legislatures who have control of health questions in provincial legislation, undertake to pass such legislation as is said to exist in Saskatchewan, which I thoroughly approve of, and would like to see copied in all parts of the Dominion, they would have to be able to present facts to influence their fellow members of the legislature. These facts have to be prepared for the legislators and I think it is part of the work of the Commission of Conservation to get these facts. One of the main purposes of the Commission is to get information and make recommendations. I do not think we ought to try to make recommendations until we have the information, and the information means in this case: "What is the condition of the rivers and streams of Canada, either local, interprovincial or international, and what remedies can be taken to provide against the dangers arising from such pollution as there is?"

There has been an acute case lately, in the way of pollution of the water of the Ottawa by the town of Aylmer. I know nothing about the facts or rights of the case, but taking it as an illustration, it is very evident that Ottawa is dependent, at present, for a pure water supply upon the upper reaches of the Ottawa river, and the upper reaches of the Ottawa river may very easily be polluted by the sewage of places like Aylmer, Arnprior and Renfrew. Aylmer is on the Quebec side of the river and Ottawa is in Ontario, and therefore it is difficult for one to protect itself against the other by any local legislation. Indeed, it looks as if it will be necessary for the Dominion Parliament to step in and place interprovincial streams, under

the jurisdiction, for certain purposes, of the Dominion Government and its departments. But if we were to propose any such legislation in Parliament we would have a storm of indignation from every provincial government in Canada. You gentlemen, who are the representatives, and many of you the officers, of provincial governments, will have to support that legislation and make a recommendation endorsing it before the Parliament of Canada will undertake to pass it in opposition to the wishes and prejudices of the provincial authorities.

At present we all know that there are acute questions as to jurisdiction and constitutional powers between the Dominion Parliament and some of the provincial parliaments; not between the Dominion Government and the provincial governments, but between the Dominion Parliament and the provincial parliaments. Mr. Osler is as much concerned on one side as I am on the other, and it is by the provincial legislation, and not the provincial governments, that this question will have to be settled. The moment legislation on these questions of public health is proposed in either the provincial or Dominion Parliaments we will be confronted with the difficulties I have alluded to in regard to conflicting authority and conflicting legislation. I do not want to detain you on this matter but I may point this out because I think it is necessary. We must get facts and then make resolutions based on these facts.

MR. OSLER: With reference to the formation of committees, personally I do not think the morning has been wasted in this discussion. I think, in dealing with this very first resolution as to the pollution of waterways, the paper that was read and the tables shown as to the condition in Saskatchewan give us a lead to bring in a resolution along the lines which that Province has adopted. If we could get every province in Canada to adopt such a stringent sanitary system as Saskatchewan has inaugurated and has carried out successfully, we would have gone a long way towards attaining our end. So far as the international question is concerned, that is a matter on which we can touch but lightly. It will come after we have dealt with our own affairs. But so far as I can judge, that resolution recommending an attempt to get legislation to enable the provinces to adopt some such plan as Saskatchewan has adopted will be a very strong one. I think it will commend itself to all the provinces and that some good will be done by it.

The question of interprovincial quarantine ought not to be a very difficult matter. British Columbia, apparently, is not in a good condition, in this respect, and I do not think there is any apology needed for placing strongly before the meeting the views that have been expressed. That is what we are here for, and any one who has knowledge such as that of Dr. Fagan, the British Columbia representative, is justified in speaking as he did to-day. These are the things we want to ascertain.

The benefits to be derived from the establishment of a central council of health ought to commend themselves to everyone.

The next item on the program, section 5, the establishment of a Dominion laboratory, is one with which I do not think we should have any difficulty in dealing. It is manifest to all that Canada needs a central laboratory to carry out to the fullest extent the preparation of these anti-toxins and sera. I do not think you put it too strongly when you told how difficult and expensive it is to procure this material now. I think Toronto alone, with its 1,200 or 1,300 cases of diphtheria, would require, at the very lowest cost, at least \$13,000 to treat their cases. I think that, on a strong recommendation from this Conference, the government of Canada would surely undertake, on the very broadest scale and the most scientific principles, the manufacture of all these necessary articles. A strong resolution on that point, I think, would be adopted unanimously, and I believe would have very great weight, because, under the Minister of Agriculture and on the Experimental Farm here, they have all that is necessary to begin the foundation on which to build up such a work.

Then there is the relationship of the Federal and provincial governments on the subject of tuberculosis. That is perhaps the greatest question of all, and I think it is a question which the Dominion Government ought to take in hand, and will take in hand, in the most generous manner. I believe that if they did it in that way they would have the support of every province. I think that is a matter that the Dominion government should undertake and there should be no difficulty in bringing in a concrete resolution to that effect.

Is it the wish of the Conference that committees should be struck, resolutions of this kind be brought in and then discussed tomorrow?

DR. FAGAN: If you bring in the resolutions and limit the discussion to five minutes you will get the views of the different members.

MR. OSLER: I am not familiar with the gentlemen here who ought to be on the various committees, so my judgment in naming committees would be entirely at fault.

DR. HODGETTS: I would move that a striking committee be appointed this morning to report after lunch, and that Dr. Montizambert, Dr. Simpson and Dr. McCullough be the striking committee.

The motion was agreed to.

DR. BRYCE: I understand the various questions will be relegated at once to the various committees, that they will bring in reports, and that the discussion will thus be brought down to a definite point.

DR. MONTIZAMBERT: How many members should there be on each committee?

MR. OSLER: There are so many subjects, you must have the committees small. Is there any general discussion on any one of the subjects now before us?

SENATOR DEVENER: Just a word on the first subject. It is brought to my mind by a few words the Minister of Agriculture made use of. To my mind this pollution of streams leads to one thing. Every town and city sets purely for its own protection, it does not care at all for the people below it. Take the city of Ottawa. As I mentioned in the Senate when I brought in my report, it empties its sewage into the Ottawa river without any thought or care of the people below, who must, of necessity, use the water for domestic purposes; but when Aylmer, a small village, talks about emptying sewage into the river, Ottawa is filled with indignation, threatens legal proceedings and offers to pay one-half the cost of putting in a system for the purification of that sewage; but it does not care in the least for the trouble it causes to the people of Montreal. It is the Ottawa river that is causing typhoid fever in Montreal.

What we want is to rise above sectional views and make the thing national. To my mind there is only one way to do it, and that is by a central body in Ottawa in connection with one of the departments. The health of animals can be looked after by the Department of Agriculture. If a case of glanders is discovered in a province, or if tuberculosis is found among cattle, our friend, the Minister of Agriculture, can send his men out, have the animals killed and the owners recompensed. But, of course, the cattle and horses are worth a certain amount of money. I suppose the human being is worth nothing.

MR. FISHER: That is not the point, we can kill the animal to prevent the spread of the disease, but we cannot kill a man, woman or child.

SENATOR DEVEBER: You would not even go out and kill the man. I talked to a great many medical men, health officers of different provinces as well as others, and they unite in saying privately—I do not know what they will say publicly—they unite with me in the idea that there is only one possible solution of the difficulty and that is to have your central body at Ottawa. It is not to take away anything from the provinces. Of course, personally, I do not think the provinces have any right at all to govern in all health matters; it is not given to them under the British North America Act. As far as I can learn by reading the act, there is nothing stated in the British North America Act except that the provinces may have the right to build asylums and eleemosynary institutions. That is all the provinces are given under the British North America Act and anything not given under the British North America Act directly to the provinces, belongs to the Federal Government. Unfortunately, it is the opposite in the United States, and anything not given directly to the Federal Government belongs to the state governments. During the last three administrations in the United States, in every one of the presidential addresses that fact has been deplored. It is further a matter of regret that nothing can be done to remedy the mistake. Now we can do something. But if you go to the provinces and say you are assuming a right to which they are not entitled, but which they have exercised since 1882 when the Ontario Government first passed its Health Act, they will object. But if it is explained to them that we are going to obtain something by having a central authority in Ottawa, which we cannot get in any other way, that we are going to obtain results which they can only obtain in that way, and—what I think will appeal to them more than anything else—that it may lift a little of the responsibility and expense off their shoulders, they will be only too willing to give it up.

MR. OSLER: I saw one of the leading members of the Ontario Government yesterday, and in talking about that very matter to him, he said: "Of course I am only speaking personally, but I think it is what the Dominion Government ought to do. If they would, we would do everything we could in the way of helping them. I think it is what they ought to do."

SENATOR DEVEBER: I think I can assure Mr. Fisher that if the provincial governments are approached none of them will object. I have talked to a great many since we held our investigation two years ago, and I can assure him they will be only too willing to relegate public health matters to the Dominion.

MR. OSLER: It would seem to be a Dominion Government department.

MR. FISHER: I do not think there is any doubt that in some respects the provincial administrators are just like ourselves, they do not want to get any more work on their shoulders than they have to take. I do not think there is any doubt that there might be an arrangement between the Dominion Government and the provincial governments. The difficulty is not there, the difficulty is when a Dominion government official undertakes to administer a law, the authority of which is questionable. I have had experience of that during the last few years in regard to the inspection of meat. The law does not authorize me to inspect meats for local consumption in a municipality. Apparently, the constitution of Canada relegates all that to the local authorities. The municipalities and the people engaged in the manipulation of meats do not want inspection. The inspection is in the interest of the public, and the majority of people who produce meats and sell them to the public do not want inspection; they want to be able to sell anything they can persuade the public to buy. And if I overstep my authority and powers, my inspectors will be told to go hang, and I would not have authority to continue the inspection. If the Dominion Parliament passed legislation obnoxious to the people and for which the people were not prepared, the municipal authorities would not enforce it, and no department of the Government of Canada could possibly enforce it in every little locality all over Canada. It would be a physical impossibility, an administrative impossibility; it is only the provincial legislatures that can call upon and force municipalities and municipal officers to carry out their legislation. The Dominion Parliament cannot do it and we would have to establish a whole force of special detectives and special officers and inspectors all over the Dominion of Canada for everyone of these laws, while a provincial legislature can say that the municipality must do so and so, and so and so. A municipality does not obey the law of the Dominion Parliament, and the Dominion Parliament has no right to pass any law imposing any duties on the municipal officer.

MR. OSLER: That could be overcome by getting the provincial governments, if the law passed is agreeable to them, to adopt it as far as their own province is concerned.

MR. FISHER: You could not get them all to do that. Why could they not do it themselves?

SENATOR DEVEBER: In order that any law may be effective, it must be uniform.

MR. FISHER: It ought to be as much as possible.

SENATOR DEVEBER: Would it not be possible to have a central board here and only have the health officers of the different provinces meet here annually to discuss all questions and have each one advance his ideas as to how it will affect his own individual province, and then and there have the regulations made out and put into effect by the central board and carried out, of course, by the provincial authorities?

MR. FISHER: You do not always find that a provincial legislature is willing to have carried out what the officers of a Board of Health think right.

DR. REID: The discussion so far has been of a rather academic nature. We, in Nova Scotia and Prince Edward Island, are so situated that we have no international waters. One point brought up by the Minister of Agriculture, I think, need not require much discussion. That is as to the amount of contamination of our international lakes and rivers. I think if they are not contaminated, they most assuredly will be, unless we take some means of preventing it. If I mistake not, they are impure now. I saw the results of a number of analyses of waters from the great lakes and I was surprised to see the large percentage of microbes present.

DR. HIGGINS: I may refer to a matter that was brought to my notice in Detroit in regard to the pollution of the Detroit river and lake Erie. An American marine architect has been interested in the construction of river and lake boats, and a boat is under construction at the present time, in which provision is made for the proper treatment of sewage before its passage into the river. This architect is also interested in the preservation of water supplies. If the boat is a success, and the sewage can be treated so it will not pollute the water supplies, it will be a great advantage. Attention will be drawn to this boat on the part of both the local authorities and the authorities of the United States Government. I bring that forward to show that

there is a step being taken in that direction to assist in the prevention of pollution.

Dr. Montizambert presented the following report of the striking committee:

1. Pollution of Waterways: Dr. J. W. S. McCullough, (Convener), Mr. E. M. Wood, Dr. M. M. Seymour, Senator L. Geo. DeVeber.

2. Harmonizing of Health Laws: Dr. C. A. Hodgetts, (Convener), Dr. R. M. Simpson, Major Lorne Drum, Mr. A. McGill.

3. Central Council of Health and National Laboratory: Dr. F. Montizambert, (Convener), Dr. P. H. Bryce, Dr. L. E. W. Irving, Dr. H. D. Johnson, Dr. C. H. Higgins.

4. Tuberculosis: Dr. C. J. Fagan, (Convener), Dr. Geo. D. Porter, Dr. A. P. Reid, Mr. F. A. Acland, Dr. E. B. Fisher, Senator L. Geo. DeVeber.

DR. FAGAN: As your Chairman said this morning, the subject of tuberculosis is one of special importance, and in order that our recommendations should be effective, I would suggest that one member from every province in Canada should be on that Committee. I think it is a mistake not to have a full representation.

DR. SIMPSON: I think that would make it unwieldy. If we adopt a resolution and make it unanimous, it will serve the same purpose.

DR. FAGAN: I do not think it would make the Committee unwieldy.

DR. MONTIZAMBERT: We understood that these Committees, as soon as they were struck, were to get to work, and introduce resolutions or recommendations as a basis on which further discussion could take place at the next meeting. If we put a representative from each province on the Tuberculosis Committee, there would be none left for the other committees. It is understood that these committees will bring in, as soon as possible, resolutions for presentation and discussion this afternoon and to-morrow.

The report was adopted.

SENATOR DEVEBER: Mr. Sifton kindly offered to attend any one of these committees. The work of the Committee on Pollution of Waterways involves some delicate legal points. As a member of the Committee, I would like to see Mr. Sifton present.

MR. OSLER: The international question is so large that I do not think it would be worth while taking it up and discussing it at this meeting.

MR. FISHER: We should clean our own house first.

DR. MONTIZAMBERT: We did not gather from you, Mr. Chairman, that the committees were to be struck to-day and all the business finished up to-morrow definitely. You gave us to understand that the committees would collect information and report in time to present their reports before the next meeting of Parliament.

MR. OSLER: What I thought was if you could frame resolutions covering these points as nearly as possible, although these resolutions might need amplification later on, we could have discussions on them and thus put the subjects in concrete form. Otherwise, we can do nothing but carry on what has been called simply an ordinary discussion, with no end to it. If you can get the resolutions framed to-day, they may not be adopted, but they certainly will form the basis for an orderly discussion. I think that is all you can do.

The Conference then adjourned until four o'clock in the afternoon.

Reports of Committees*

The Conference resumed at four o'clock, Mr. Osler in the chair. The first matter to come up was the reports of committees.

Dr. Hodgetts read the following report of the Committee on Harmonizing of Health Laws:

Referring to Subjects 2 and 3 of the programme
Harmonizing of of the Conference of Dominion and Provincial Health
Health Laws: Officers, 1910, the subjects being as follows:

Subject 2.—Discussion of the question of International and Interprovincial Quarantine.

Subject 3.—The desirability of harmonizing the Public Health Laws (including vital statistics) and suggestions in regard thereto.

Your Committee begs to recommend as follows:

That this Committee recognizes that definite action cannot be taken by it until it is in possession of specific information regarding the Federal and Provincial health laws now in force in the different provinces and municipalities of Canada and the manner in which, and to what extent, such laws are being administered. It appears

* The Reports of Committees are here given in their final form after all amendments had been incorporated in them.

from the foregoing, that it would be well to provide for the collation and systematic presentation of the facts of the case, on the basis of which representation the Committee may be able to formulate a course of action. It is, therefore, recommended that this Committee persist until such time as it shall be able to fulfil the requirements of this resolution.

And, further, your Committee recommends that this Conference approve by resolution the adoption by all the provinces of a standardized plan of statistics on the lines accepted by the provinces of Quebec, Ontario and Manitoba, i.e., the International system, and that it be extended to suit each province; further, that the vital statistics be placed directly under the supervision of the provincial health authorities of each of the provinces; and, also, that this information be sent to the Director General of Public Health; and, also, that the legislature of each province, which has not already made such provision suggested by this resolution, be requested to do so at the earliest possible date. Your Committee would particularly recommend that the Medical Adviser to the Committee on Public Health of the Commission of Conservation secure from the various provinces and municipalities such information as the Committee desires.

(Sgd.) CHAS. A. HODGETTS,

Convener.

DR. MONTIZAMBERT: One thing that strikes me is that the report might be extended to recommend that after the provincial officers had collected the information, and published their vital statistics, they should send them to the federal officer in charge of vital statistics so that he might have vital statistics for the whole Dominion of Canada. In my office, I am constantly receiving inquiries as to the prevalence of various diseases and the number of deaths throughout the Dominion and we have no means of answering such questions. If, after the provincial authorities have had full use of the statistics, they could be sent to Ottawa, collated, and published as statistics for the whole Dominion, it seems to me it would be of additional value to the service.

DR. HODGETTS: I think that is quite right. The Dominion government recognizes the fact that this is a national matter, in so far as it has granted free postage for all vital statistics returns from the municipalities to the provincial authorities. As convener of the Committee, I personally concur in that, and I think the Committee

will too. It is the natural sequence that that should be done. I would confine it to health lines altogether.

DR. SIMPSON: As one of the members of this Committee, I quite agree with the statements which have been made by Dr. Hodgetts. I think it would be wise to do what he suggests. I do not think there would be any objection. In fact, I think it would be an advantage to any one concerned to do so. I agree with the suggestion of Dr. Montizambert.

DR. HODGETTS: I would move the adoption of the report of this Committee.

MR. OSLER: Do you not want, in addition to finding out what the health laws are, to find out to what extent they are administered in each province? Can you get that? The laws may be there, but very little effect given to them.

DR. BRYCE: In the first clause, there is nothing said about collecting information regarding federal laws.

DR. HODGETTS: It says all health laws now in force.

DR. SEYMOUR: I think the suggestion about obtaining information as to how the laws are being administered is most important. We know there are a number of laws in reference to the pollution of streams, for instance, which are not being carried into effect. So, before endeavouring to secure any additional legislation, it is extremely important to have that information.

MR. OSLER: That is concluded.

Dr. Montizambert read the report of the Committee on a Central Health Board and National Laboratory.

**Central Council
of Health and
National
Laboratory** Your Committee on Central Council of Health and National Laboratory begs leave to report as follows:

1. That, in its opinion, the needs of Canada demand that a permanent National Council of Health be established under the Commission of Conservation, to be composed of,—

(a) An officer representing each branch of a federal department engaged in public health work.

(b) A representative from the public health service of each province or territory.

2. Such Council shall hold one annual meeting at Ottawa and such other meetings at Ottawa, or elsewhere, as may be deemed ex-

pedient, at the call of the Commission of Conservation. Additional meetings may also be called through the Commission of Conservation at the request of the Ministers administering public health of any three provinces or territories.

3. Such Council shall,—

- (a) Advise regarding the harmonizing of existing public health legislation in federal or provincial statutes.
- (b) Advise as to passing of new legislation or regulations in the interest of public health, whether federal or provincial.
- (c) Advise as to the nature of work best administered by federal, provincial and municipal health authorities.
- (d) Advise as to the work to be conducted by such National Health Laboratory as may be established, or that is being conducted in such laboratories as are now engaged in public health work.
- (e) Advise federal and provincial governments as to steps to be taken when epidemic disease threatens or appears within or without Canada.
- (f) And generally to advise on such questions of public health as may from time to time arise.

4. That a National Public Health Laboratory be established,—

- (a) To investigate public health problems.
- (b) To manufacture sera, vira, vaccines, toxines, antitoxines and other analogous products.
- (c) To supervise the manufacture and importation of all sera, vira, vaccines, toxines, antitoxines and analogous products offered for sale in Canada, whether designed for use in the detection, prevention, treatment or cure of diseases of men or animals or obtained therefrom.
- (d) To investigate through its technical officers questions relating to,—

The pollution of streams.

The preparation, preservation, inspection and sale of foods and drinks.

The housing conditions as regards lighting, ventilation, heating, etc., of public buildings, schools, manufacturing plants, residences, tenements, etc.

Research work and the investigation of any other spe-

cial matters which from time to time may arise affecting public health.

5. That the Commission of Conservation be requested to send an officer to study and report upon the work and expenses of such laboratories in the United States, upon the methods of distribution and sale of the various products, and the initial cost of establishing such a laboratory.

(Sgd.) F. MONTIZAMBERT, M.D.,
Convener.

DR. MONTIZAMBERT: It is for the Chairman to say whether, this report shall taken up "*en bloc*" or *seriatim*.

MR. OSLER: *Seriatim*.

On paragraph 1.

MR. OSLER: It strikes me that this is a work that should be taken charge of by this Commission.* Instead of asking the Government to appoint a separate commission why should not this work be done through officers appointed by this Commission? We could appoint all the officers that are necessary.

DR. FAGAN: I certainly would thoroughly approve of that suggestion. The recommendation of this Commission would have such an effect on the Government that the smaller questions of politics would not enter their minds. I would strongly advocate having it in the hands of this Commission. Here is a Commission that has taken a stand that is a very useful and practical stand, and I think it should be left to it. You as a lawyer, Mr. Chairman—

MR. OSLER: I am not a lawyer. Great Heavens! do not accuse me of that.

DR. FAGAN: I am always accused you of that. At any rate, you are a member of the House and understand the situation, and I think it would be much wiser to leave it out of the hands of governments that cannot always do what they want to do.

MR. OSLER: I am quite an amateur at this work and I cannot say how these things will have to be carried out. That must be the work of professional and trained men. I do not want you to take any suggestions I make as having any authority whatever, because I am, perhaps, the most ignorant at the table on health conditions and how they should be dealt with.

* As originally drafted, this clause did not suggest that the National Health Council be established under the Commission of Conservation.

DR. BRYCE: The idea has long existed amongst those who have been administering public health work that in order to have the question of public health adequately presented to the people, there should be some central body of medical men, and that the work to be done by them, was of such a peculiarly technical nature that it would demand the bringing together of the technical men of the various provinces. Your committee, in suggesting this, was not thinking of anything excepting the question *ad hoc*. The idea seems to be that to constitute a body of this kind with the importance it should have an Act of Parliament would have to be secured. Now, it would be quite possible, of course, to have the present Conservation Act so amended, I presume, as to make this possible. But if it were so, then one does not see at the moment any particular objection to the existence of a Public Health Council under the Commission, providing it were given the work to do, an outline of which follows here in the several clauses. It did not occur to the Committee, so far as I am aware, that the bringing together of officers, specifically designated as federal officers and provincial officers, could be worked out along any other line except that set down here. If it can be, it would simplify the matter, possibly by making the Council a part, in some way or other, of the Commission of Conservation. Just how it would work out, of course, I do not know. But the essential features of this, as you will see, are that all the federal officers who are at present engaged in public health work would be *ex officio* members of the Council, and second, that all the provincial officers, or rather representatives of each of the boards engaged in public health work, would also be *ex officio* members. I cannot see at the moment where the work would, in any sense, clash with anything the Commission is doing to-day, but I can see very clearly that it would be necessary to amend the present Act regarding the work of the Commission if this is adopted. How far it would work out afterwards, I do not know, but at any rate, if we are all agreed that this Council is necessary, the machinery by which it would exist and do its work may be definitely worked out. It is only a suggestion that there should be a Council of Public Health established, made up in this particular way of federal officials and provincial officials.

MR. OSLER: The Government has appointed this Commission with pretty extensive powers and will probably give it all the fur-

ther powers that may be necessary. And they may say, you are sending back part of your duty to us when you ask us to appoint another Commission. I think that the fewer Commissions there are, in cases like this, the better. Whatever is necessary in regard to getting the officers would be better done through this Commission than by having another Commission appointed by Parliament. That is how it strikes me.

DR. BRYCE: We are agreed that there should be a Council of Health. How it should be organized by law is another thing.

DR. MONTIZAMBERT: Suppose we take out the words "by Act of Parliament" and leave the question open?

MR. OSLER: I am only throwing out the suggestion. I do not know that it would work that way. It is dividing the powers given to the Public Health Committee of the Commission. It would mean multiplying the machinery of the Government and putting that branch of it out of the control of this Commission. It is not necessary to adopt the report to-day, but we can take it up to-morrow. We can think about it and see if there are any difficulties in the way. There is no need for us to finally settle it now, if there is any doubt about it.

DR. FAGAN: Does adopting that mean that we approve of the present conditions in the Federal Government? If so, they will have a Health Department for Indians and a Health Department for Quarantine and a Health Department for Immigration.

MR. OSLER: I would say no. It does not approve of anything. It would establish a new council.

DR. FAGAN: Would it not come in here that we should suggest to the Dominion Government the need of having a council that would be completely in control in health matters, and take over all the side issues from the different Ministers having health questions before them? Public health would then come under one department and be handled there intelligently and effectively, which is not now the case.

MR. OSLER: I would understand that that is what the resolution means.

DR. FAGAN: I would think it did not imply that, because further down it refers to the different health officers under the Federal Government. I certainly would advocate as strongly as I could that the Dominion Government be approached by this Committee and

asked to have one central health authority, and that all Dominion questions come before that authority. That is simply a question of common sense.

DR. HODGETTS: I think the two questions are separate and distinct. The one recommended by the Committee is the establishment of an advisory council. The suggestion of Dr. Fagan is that we should recommend to the Federal Government that they should co-ordinate under one branch of the Government Service the various works that are now carried on that pertain to the health of the people. The two subjects are separate and distinct. After this report is discussed, it would seem to me to be quite in order for Dr. Fagan, if he wishes, to submit a resolution of that kind which we could then discuss.

DR. MONTIZAMBERT: That is the feeling of the Committee. The question of a health committee was considered and it was felt not to be within the four corners of what we have to discuss. It is a consultative committee which we have recommended. With regard to a Health Department, if there is to be one, we have felt that that is a matter which might come up for consideration at the first meeting of this central council, if such a central council were established; but we did not see that we could bring in a recommendation of that nature as a report upon the sections that we were directed to report upon.

DR. FAGAN: The sections upon which you have to report can be enlarged. The report speaks of an officer representing each branch of the Federal Government engaged in public health work. That seems to confirm the present condition and approve of the continuance of the conditions now existing.

DR. MONTIZAMBERT: It simply states that; it does not express any opinion.

DR. FAGAN: It is submitting to it.

MR. OSLER: Shall we bring in a separate resolution as to that?

DR. FAGAN: I do not see why it should not be in here.

MR. OSLER: I do not see any reason why it should not be enlarged.

DR. FAGAN: This is not a question of Act of Parliament, it is simply a question of the formation of this Committee.

DR. MONTIZAMBERT: When the Committee is instructed to report on certain sections they naturally confine their report to those sections.

DR. REID: I agree with Dr. Fagan that the second part of the resolution seems to confirm the idea that the Dominion administration shall be under the several departments of the Dominion Government. If it is the intention to introduce the further amendment of Dr. Fagan, I think that second provision should be made to harmonize.

MR. OSLER: Will you read it again please.

Dr. Montizambert then read the paragraph.

MR. OSLER: What is to be their duty?

DR. MONTIZAMBERT: Consultative. Their duties are laid down later on in the report. (Dr. Montizambert read the sections defining the duties of the proposed council).

MR. OSLER: That is a council to advise the government entirely apart from this Commission apparently.

DR. BRYCE: It does not refer to anything except advising.

MR. OSLER: No.

DR. BRYCE: If it is appointed by law it will naturally advise the several provincial governments or the Federal Government.

MR. OSLER: It would take it away from this Commission at once; it is to advise the government.

DR. BRYCE: Advise the governments?

DR. REID: Yes, the Commission appointed under it would take that duty from this Commission.

MR. OSLER: That would be divesting ourselves entirely as a Commission of Conservation of all that work. We would have nothing to do with it after the commission was formed.

DR. BRYCE: The Committee has misinterpreted the intent of the instruction contained in the clause here if it has drawn this up in any way which would indicate that all the work done by this public health council was to be a part directly of the work of the Commission. If it had been instructed that this council of health was to be, as it were, one of the branches of the Commission doubtless it would have drawn up the wording in that way. It did not so understand. I am sure the Chairman and myself and others did not understand that that was the idea.

DR. MONTIZAMBERT: It never occurred to us.

DR. BRYCE: If we were to report back that this council should be a subsidiary part of the Commission, then of course it would have been well to draw it up from that standpoint.

MR. OSLER: Do you not think that is what is intended?

DR. MONTIZAMBERT: If we were to take out the words "by Act of Parliament" it would be simply a recommendation to the Commission of Conservation to establish it.

DR. BRYCE: If the council existed, it would not be material how it got its suggestions carried out.

MR. OSLER: I would take it, it was intended to perform a part of the work of this Commission, and that when it reported and the Commission had adopted its report, the recommendation of the Commission would have great force with the Government in getting these suggestions adopted.

DR. FAGAN: I move that this section be referred back to the Committee.

DR. MONTIZAMBERT: I do not see any necessity for that delay. If the words "by Act of Parliament" are omitted it becomes an instruction to you.

MR. OSLER: You can discuss that and think it over and revise it in the morning.

DR. BRYCE: The idea is that all the workers in public health be got together for consultation. When a line of action in regard to the pollution of streams or anything else had been determined upon, the resolution of that council would be a recommendation that legislative action be taken. How that is proceeded with, whether directly or through the Commission, is another question.

MR. OSLER: It seems to me it should come through the Commission if the recommendation is to have any force. The recommendation of the Commission would have much more weight than the recommendation of a number of officials.

DR. BRYCE: It is not for the Committee to make that part of the report if we are not asked to do so.

MR. OSLER: That is how it strikes me and we had better leave that.

Dr. Higgins proposed a resolution advocating the formation of a permanent national council of health.

MR. OSLER: Mr. Sifton is keenly interested in these matters. I propose that all the suggestions be submitted to him to-night and we shall have the benefit of his advice and assistance upon them tomorrow.

DR. MONTIZAMBERT: We leave the clauses as they are at present?

MR. OSLER: Yes, I think so.

DR. MONTIZAMBERT: The other part of the report refers to the establishment of a national public health laboratory, and the objects that such a laboratory should seek to accomplish.

MR. OSLER: I think that this is perhaps the most important thing there is to deal with and I would like to suggest that some man who has made a study of it be sent to New York and Washington, where, I understand, in some of the hospitals, they have special provisions made. Of course, I am speaking without full knowledge, but Dr. Hodgetts knows all about this. I understand that you can get information there as to the exact cost of all the sera and anti-toxins. I am told the cost is exceedingly small and I think that if we had a report as to what is being done in that way and had it before the Commission, the Government would undoubtedly grant our recommendation to expend a certain amount of money at once to establish such an institution. But we will have to show the Government what it would cost to install and maintain such an establishment that would sell its products at a little over cost in all parts of Canada. I am told that in Toronto, in typhoid alone, the cost of treating the 1,300 cases reported there would be, at the lowest cost of the poorest laboratory, \$13,000 a year. I do not know what the hospitals are expending but the amount is very large, and I believe they are administering doses so small that they seldom do any good. If we had a report of that character saying what is being done elsewhere and giving the cost, I think the Government would almost at once adopt any suggestions we made.

DR. MONTIZAMBERT: With the preamble altered as it is now, this would simply be a recommendation to the Commission of Conservation that a national health laboratory be established.

MR. OSLER: That is quite right, but would it not be right to go further and recommend that authority be given to send a proper man to New York and Washington and report what is being done there.

DR. HODGETTS: New York state, New York city, the federal authorities at Washington and the authorities in some of the other states are engaged in this work at present and the information can be readily obtained. A few years ago I was in Albany. The cost there for diphtheria anti-toxin was 16 cents per thousand units and the plant was not a large one. All this information can be readily obtained along the lines indicated.

DR. SIMPSON: In Manitoba, we give the anti-toxin free. It costs us 32 cents per thousand units. We get it from the Marine Hospital, New York.

DR. BRYCE: We are losing sight of a part of clause 4 which, while it intends to do all that is suggested by you, goes much further. We have been hoping for many years that there would be in Canada something more than we have at present in the matter of public health research work. One of the functions of such a laboratory as we propose should be established is not only the preparation of these sera for boards of health and for individuals, but to study the whole problem of the pollution of streams. We have no place to-day in Canada where we can look for technical officers of authority with regard to any engineering or biological problem. We wish to manufacture sera, and that would be one of the first things this laboratory would naturally do. We wish to supervise the manufacture and sale of drugs in the market to-day. We wish to investigate the question of pollution of streams, the preparation, preservation and inspection of foods and drinks. We wish the laboratory to take up the matter of housing conditions in schools, and the question of slums and, in short, to investigate all problems relating to health. You see the committee's ideas contemplated something further than the manufacture of sera.

DR. MONTIZAMBERT: In addition to that we want men to engage in individual research.

DR. BRYCE: We want men to do new things so we hope section 4 will be adopted much as it stands, so that the laboratory will be a large affair like the Rockefeller at Washington or the Marine at New York, or the laboratories at Cambridge and Boston. We would like to get far beyond the mere manufacture of sera, so I hope this part of it will remain as it stands.

MR. OSLER: I think that is entirely in accord with the wishes of everyone. I merely suggested the other because if you can get the Government to establish the one, the others will follow as a natural consequence. If you can go before the Government and show what it will cost to establish it in the first place you can get it started and the other features will grow from it. You cannot ask the Government for money for these other things until you bring them from time to time before them.

DR. MONTIZAMBERT: If you adopt the principle of the establish-

ment of a laboratory, would not the sending of a man to investigate be part of the details?

MR. OSLER: Somebody has to suggest the start.

DR. BRYCE: It would come up in the discussion afterwards of the practical carrying out of the several recommendations of the Committee.

MR. OSLER: I think that the sending of someone to get a report on the first cost would be the best beginning.

DR. FAGAN: I beg to move that the Chairman's suggestion be adopted.

MR. OSLER: If you can go before Parliament and say just what is to be done and that it will cost, say \$25,000, there is no question that the Government and Parliament will do it at once.

DR. BRYCE: How will this do, that the Commission of Conservation be requested to take steps to supply such information.

MR. OSLER: Send a competent officer to report as to the working of the various laboratories, the Rockefeller, the Russell Sage, etc.

DR. HIGGINS: I think we have part of that material available in the laboratory conducted at the present time in the Health of Animals Branch. We are manufacturing vaccine for black leg and anthrax and we are also manufacturing maline. Some sera have been manufactured for the treatment of human tuberculosis. Other materials are manufactured right along and I can give you the cost of them at once if you wish.

DR. MONTIZAMBERT: We can add to the report a clause that the Commission of Conservation be requested to send an officer to report upon the work, expenses, and methods of distribution and sale of the various products of such laboratories in the United States.

DR. HODGETTS: The New York State Board of Health supply seven million or eight million people.

MR. OSLER: You may have the statistics near at hand. You want the cost of manufacture and how they dispose of their product, whether they sell it at a profit or at its actual cost, and what principle they adopt in giving it away. All these things will be proper subjects of enquiry.

**Pollution of
Waterways**

Dr. McCullough read the report of the Committee on the Pollution of Waterways as follows:

Your Committee on the pollution of interprovincial and international waters begs leave to report that *whereas*, the pollution of the waterways of the Dominion by raw sewage and factory wastes is a menace to the health of the public generally by reason of the contamination of public water supplies as indicated by the excessive mortality from enteric (typhoid) fever alone, and by the evidence taken and the report made by the Public Health and Inspection of Food Committee of the Senate of the Dominion of Canada; and

Whereas, the maintenance of the permanent purity of public water supplies is a matter of national importance affecting as it does every citizen, whether a resident of our cities and towns or of our rural districts;

Whereas, the provincial health authorities, have jurisdiction only over those waterways lying within the interprovincial boundaries and are unable to protect those resident therein against pollution which may happen either in a contiguous province or in an adjoining country;

Whereas, in some instances these pollutions are great, and widespread by reason of the immensity of our international waterways upon which there are annually carried some ten millions of people;

This Conference of the Dominion and Provincial Health Officers recommends:

1. That the Government of the Dominion of Canada enact a law prohibiting and penalizing the deposition of raw sewage, garbage and factory wastes in the waterways of Canada and in waters tributary thereto, along the lines of the draft bill herewith appended, such act to be administered by the Dominion Minister of Agriculture.

2. That the Provinces be requested to give effect to such legislation so that there shall be no conflict of jurisdiction between the Dominion and Provincial Governments in regard to these matters.

3. That the several legislatures of the Dominion of Canada be recommended to insert in their public health acts the following clause:

No by-law providing for the raising of money for the construction, operation or extension of any system of water works or common sewer or system of sewerage or sewage disposal,

shall be submitted to the votes of the electors by the Council of any municipality until the consent of the Commissioner of Public Health or of the Provincial Board of Health, as the case may be, to the proposed construction, operation or extension, has been first obtained, and the preamble to every such by-law shall declare that such consent has been duly obtained; no debenture shall be valid if issued under any by-law passed in contravention of the provisions of this section.

This clause we believe will have the effect of preventing municipalities from evading the present provisions of the Public Health Act in this respect.

And that it be urged upon Provincial authorities to adopt legislation providing for the systematic supervision and inspection of all water purification and sewage disposal plants so that the same be maintained in their efficiency; and

4 That we strongly urge upon the Commission of Conservation to request the Government of the Dominion of Canada to consider the necessity of conferring with the Government of the United States, with a view to preventing any further pollution of international waters.

All of which is respectfully submitted.

(Sgd.) JOHN W. McCULLOUGH,

Convener of Committee.

Carried.

DRAFT BILL TO PREVENT THE POLLUTION OF NAVIGABLE AND
OTHER WATERS *

1. No person, corporation or municipality shall place or permit to be placed, or discharge or permit to flow into any navigable or other waters of the Dominion of Canada

(a) The solid refuse of any manufactory or manufacturing process, quarry or mine, or any rubbish or cinders, or any other waste, or any putrid solid matter;

(b) Any solid or liquid sewage;

* This matter was brought to the attention of the Dominion Government, and Senator Belcourt introduced into the Senate a "Bill respecting the Pollution of Navigable Waters," which was passed by that body on April 4th, 1911.

- (c) Any poisonous, noxious or polluting liquid or colouring matter proceeding from any factory or manufacturing process;

except in the manner and under the conditions prescribed by Regulations to be approved of and published by "The Minister" and upon permit of said Minister or his Deputy.

2. On and after the passage of this Act (or date to be named) it shall be unlawful for any person, corporation or municipality who at the time of the passing of this Act are contravening the provision of Sec. 1 of this Act, to continue so to do if, in the opinion of "The Minister," after official investigation and, if necessary, enquiry under oath, the continuance of such act or acts is a menace to the public health.

The Minister is hereby authorized to issue such regulations and orders as may be approved by the National Council of Health for the purposes and intent of this Act—the same to become law from the date of their publication in The Canada Gazette.

4. Any corporation or municipality contravening any of the provisions of this act or of any regulations or orders of the Minister or of his Deputy shall be subject to a penalty of \$500 and \$50 per day for each day the offence is maintained after notice has been served to discontinue the same; or, if the offence is made without permit of the Minister or of his Deputy. In like manner any individual so contravening shall be subject to a fine of \$50, and \$10 for each day the offence is maintained, or by imprisonment not exceeding two months, or both, at the discretion of the magistrate.

5. Any order or decision of the Minister or his Deputy shall be subject to an appeal to any High Court of the province in which the offence is committed, and said Court shall have power to hear said appeal and may affirm or set aside said order or decision or modify the same, or otherwise fix the terms upon which permission shall be granted; but the order or decision appealed from shall not be superseded by the appeal, but shall stand until the order of the Court as above.

DR. McCULLOUGH: If I might be permitted to say a few words in explanation. The report starts out by stating that the waterways of the Dominion are polluted and the evidence of that is that which you see here on the board—the table of typhoid fever deaths in all

parts of the Dominion. Secondly, it is proved by the evidence taken and the report made by the Public Health and Inspection of Food Committee of the Senate of Canada, of which Senator De Veber is chairman.

Then the report goes on to say that the maintenance of the purity of public water supplies is a matter affecting everyone and further that the provincial health authorities have jurisdiction over only those waters lying within their boundaries. Then it recommends that the Government should prohibit and penalize the deposition of raw sewage, garbage, and factory waste in the waters of Canada on the lines of the draft bill which Senator De Veber has here.* It goes on to state that if necessary such legislation be supplemented by special legislation of the provinces so that there shall be no conflict of jurisdiction, and again that this clause be inserted in the Public Health Acts of the provinces that might not have it at present. This is one of the most important things we can have. In Ontario we are continually face to face with a condition of the kind to which Dr. Hodgetts referred this morning, that some municipality is establishing a system of water supply and may have it completed before the Provincial Board of Health will hear anything about it. Even if they submit their plans to the Provincial Board and they are not approved of, we cannot stop them from going on as we could if we had a clause saying that in the preamble of their by-law they must have the permission of the Board of Health before they can issue their debentures. That is the only thing that can prevent municipalities evading the provincial authorities in regard to sewage systems and waterways.

Further, we ask to have the government communicate with the government of the United States to prevent the further pollution of international waters.

DR. MONTIZAMBERT: There is one small point to which I would like to draw attention: it is the recommendation that certain laws be administered by the Director General of Public Health. It is not usual for the official to administer the law, I think it should read the Minister of Agriculture.

DR. HODGETTS: I might suggest that possibly it would be only right and proper to urge on the provincial representatives that they

*See page 167.

maintain a constant supervision over water purification plants and sewage disposal plants. It is one thing to install the best sewage disposal plant that engineering skill can devise; it is another thing to properly maintain that sewage disposal plant in an efficient manner so that it is doing what the engineers propose, and the public suppose they are paying for. The same thing applies in regard to water filtration plants. I take it that there will be co-operation with the federal authorities, but I think that the responsibility should rest finally on the provincial authorities to maintain an official oversight by systematic inspection of all these plants. Some suggestion along that line should be made to the provincial legislatures.

MR. OSLER: It would be proper to put that in this resolution.

DR. HODGETTS: The amendment is "That it be urged upon the provincial authorities to provide for the systematic supervision and inspection of all water purification and sewage disposal plants so that the same may be maintained in their efficiency."

MR. OSLER: Attached to that is a skeleton bill in connection with the regulation of sewage.

**Committee
on
Tuberculosis**

DR. FAGAN: I have here some ideas written out but they have been hastily set down and this report is certainly incomplete in the highest degree. I have to ask for an extension of time but I would like to read this, so that we may have suggestions from other members. We do not know what the Dominion Government would like to do. We have no idea, no suggestion even whether they would do anything at all, and we do not know where we are in reference to the question. I know that this report is not at all a proper handling of the subject and I would ask for an extension of time and also that some other members of this Conference be added to the Committee.

Dr. Fagan then read the report of the Tuberculosis Committee.

Your Committee begs to report as follows:

That *whereas* tuberculosis causes the death of from twelve to fifteen thousand Canadian citizens every year, the majority of these deaths occurring at that period of life when the persons affected should be most useful to their families and to the community; and

Whereas Germany has taken strong steps to fight the disease with the result that, within the last twenty years, her death rate from tuberculosis has been reduced by six-two and a half per cent., that

England, too, has reduced her death rate from this disease by fifty per cent.; while, on the other hand, Ireland, which, up to two years ago, had taken no action, had her tuberculosis death rate increased during twenty years by fifteen per cent.; and Newfoundland, which, hitherto, has neglected to take action, has had her tuberculosis death rate increased even more rapidly than that of Ireland; and

Whereas reports from hospitals and sanatoria have shown that incipient cases of tuberculosis are cured in some cases to the extent of eighty per cent.; while moderately advanced cases have been shown to have a less chance of recovery; and very advanced cases can never be restored to health; and

Whereas tuberculosis is to-day recognized as a communicable disease and that the two great sources of infection are persons suffering from it, and tuberculous animals; and

Whereas the methods found effective to prevent it are (a) education, (b) sanitary houses, (c) healthful places of employment, (d) the care of advanced cases, and (e) the treatment of incipient cases; and

Whereas the responsibility for the protection of the health of the people of Canada from communicable disease rests upon governmental bodies; and

Whereas advanced cases of tuberculosis in persons are the greatest known cause of the spread of the disease; and

Whereas affording hospital treatment to open and advanced cases results in limiting its spread (a) by removing infection from families and the community; (b) by affording the patient a chance for recovery; (c) through educating patients as to their responsibility for adopting methods that will prevent them from becoming factors in spreading the disease; and

Whereas the problem of dealing with advanced cases of tuberculosis is a very great one, so difficult and so expensive that, so far, no government in Canada has dealt adequately with it; and:

Whereas advanced cases of tuberculosis are not infrequently arriving in Canada from foreign countries; and

Whereas advanced cases of tuberculosis move, in the hope of betterment, from one province to another; and

Whereas the British North America Act places the management of hospitals, and similar eleemosynary institutions specifically under provincial management, it no where indicates that all

health work and prevention of disease must be carried out by the provinces; and

Whereas at the present time, federal funds are expended on sick soldiers, sick seamen, sick Indians, sick immigrants, and sick animals; and

Whereas every one from the individual citizen to the nation as a whole is called upon to assist during national danger and during national calamity; and

Whereas the calamities due to tuberculosis are national and are greater than the individual, municipality or province can cope with;

Resolved, therefore, that the federal authorities should give substantial assistance both for supporting and carrying on such work already in existence and to encourage the establishment of new sanatoria and hospitals for consumptives.

It is further recommended that, with a view to encouraging and assisting tuberculized persons and their families, the Commission of Conservation take early steps to secure from the different governments areas of Crown lands in localities recognized as being climatically favourable for the cure of tuberculosis, such areas to be set apart for colonies of tuberculized persons and their families, for settlement under such conditions as may be found practicable.

It is further suggested that, in the event of any system of working men's insurance being established by the Federal Government, provision be made whereby tuberculized persons, if recipients of sick benefits, be required to take advantage of such sanatorium treatment as circumstances may permit of.

(Sgd.) C. J. FAGAN,
Convener.

Moved by Dr. McCullough, seconded by Dr. Irving, that it be a suggestion to the Committee "That the Federal Government be asked to vote a certain sum of money each year for the purpose of the suppression of tuberculosis, the said money to be expended by the Commission of Conservation under direction of this Conference." Carried.

BOVINE TUBERCULOSIS.—*Resolved* that this Conference heartily endorses the recommendations set forth in the Report of the International Commission on Bovine Tuberculosis. Carried.

DR. FAGAN: I am asked by the Committee not to present this as

a complete report. It is not one we could expect you to adopt but it is the foundation of something to be given you to-morrow. We would ask an extension of time and any suggestions that would occur to you from hearing what we have said.

DR. HODGETTS: I take it that the chairman of the Committee wishes that that be referred back to the Committee.

MR. OSLER: If anyone has any suggestions to make this would be the proper time.

MR. WOOD: What do you mean by the expression co-operation of the Federal authorities and the provinces? Do you mean financially?

DR. FAGAN: Yes.

MR. WOOD: Why not say so?

DR. FAGAN: I do say so. The provincial governments are doing their best. The government of British Columbia and, I think others in Canada, are expending a great deal of money, as much as their financial conditions will permit; but they are not in a position to handle the subject properly. They are willing to go farther if they get a little assistance.

MR. FISHER: You say that the Dominion Government be asked to co-operate with the provincial governments, but do not say in what way or to what extent, and do not say that it is already being done.

DR. FAGAN: Another thing would be that someone more accustomed to drawing out reports should be on this Committee. I have had no experience in work of that kind. I have full and complete knowledge of the subject but I am not able to draw a report and I would ask that some additions be made to our Committee. There is a doctor from Winnipeg who knows how to put things in the best way.

DR. SIMPSON: I am thoroughly in accord with the last part of that resolution if it may be termed a resolution, that is that financial aid be extended to the provinces by the Dominion Government. In Manitoba, eight or nine years ago, we secured legislation which enabled us to start a hospital for incipient cases. We have been struggling along for years until about last June we were able to open our sanatorium for incipient cases in southern Manitoba. I must say that entailed a great deal of work and responsibility on the part of the Board of Health but we were willing to assume it. We had to go around to various friends, and solicit subscriptions for the institu-

tion. I must say that many were very liberal in their contributions and a member of the firm to which our chairman belongs gave very liberally to that institution at that time, not only in money but also in donations of land and sympathy. We were thus enabled to collect a sufficient amount of money to enable us to start that institution. After we got fairly on the way we found that we were still very much in debt and in desperation we went to the Provincial Legislature and they very generously supplemented our work by a grant of \$25,000. But even then we found we were in debt and at one time we were almost on the point of closing down, although we had about sixty incipient cases of tuberculosis in the hospital. We were almost obliged to suspend for want of funds. The Provincial Legislature refused to advance any money, our friends thought that they had given liberally and we hated to go back and ask them to contribute further to the fund. You understand how humiliating it is to be begging all the time and I wish to say of the doctors of Manitoba that there was not one who did not give to the institution freely. Then we had a Tag-Day to collect money to establish a sanatorium for advanced cases. We collected on that day something like \$30,000 and we found that the only thing we could do in order to keep open our institution was to take some of that money from the fund which we had collected for advanced cases and turn it over to the one for incipient cases. This, of course, created a great deal of dissatisfaction and considerable talk, but we gave it anyway. We thought it better to keep that institution open than to close it and have nothing in addition. Now we are in this position, that in Winnipeg we would like to establish an institution for advanced cases but we cannot do it. We have not the funds, we are still in debt for the sanatorium for incipient cases. It is a splendid institution and we could take in a great many more cases if we had the necessary accommodation.

That is the situation in Manitoba. It very likely obtains in other provinces as in Manitoba, and therefore it seems to me that the Dominion Government should do something towards helping the provinces to help these cases, particularly in the West where we have so large an immigration. The country is growing, we have all classes of people coming in there, and although Dr. Bryce has his eagle eye on all who come to this country, some cases of disease come in. We get a great many of these cases in Manitoba but, be that as it may, there they are in great numbers, and we have a very bad con-

dition of affairs among the foreign population in Winnipeg which, to a large extent, fosters the development of tuberculosis. We feel that the Dominion Government should contribute to taking care of these advanced cases as well as to taking charge of the incipient cases. It is true that we get from the municipality one dollar a day and this is supplemented by the local government by a further grant of forty cents a day. This gives us \$1.40 per patient per day to maintain the hospital once we have it established and free of debt. We hope to maintain the incipient hospital in this way, but up to the present time nothing has been done for these advanced cases of tuberculosis which are a medium for the spread of this disease. We hope and trust that this Conference will take this up for us and, by the central council which they may think fit to establish through the resolution brought in by Dr. Montizambert, will do something to help us to take care of the advanced cases in Manitoba now.

I think this should apply to every province in the West as it does to Manitoba. Manitoba, being the oldest province on the prairies, of course has taken the initiative in establishing a sanatorium, and we hope now that we will be able to get a sanatorium for advanced cases through the good wishes and financial aid which Dr. Fagan has asked from the Dominion Government.

MR. OSLER: There is no doubt at all that we sympathize with the resolution very much indeed. The report sent in by Dr. Fagan is one in which we all can concur, but in reading over his suggestion I see that he is asking the Dominion to perform a very heavy duty, to undertake a very heavy contract, because what would be true of Manitoba is true of every other province and locality in the Dominion. Our people would require the same assistance as the people of Manitoba and this would apply to all parts of the Dominion.

DR. SIMPSON: Surely.

MR. OSLER: My ideas on the subject are given in a very few words. The first is that the campaign against tuberculosis shall be conducted by each province but that it is desirable that the lines on which it should be conducted should be under the control of a central authority, which means the Dominion Government.

The question of financial aid is a subject for discussion, and I would suggest that a grant be given to each province in proportion to population, provided the regulations of the central authority are complied with. I think you will agree when you think the matter

over, that there is really no question in dispute between any members of the profession with regard to the proper treatment of tuberculosis. I do not know that there is any question in dispute. Hence there is no reason why a central authority should not lay down regulations which would be a guide to every other province and to every one interested in this tuberculosis question. Thus you would have a central authority to direct—I would not say co-operate with, because you can co-operate and yet have different ideas on a subject. The central authority should direct and any province which would not comply with the directions of the central authority would not receive its share of the grant. In other words, we assume that the central authority would adopt the very best method for the treatment of tuberculosis in any and every form, and that it would have its directions laid down in definite and precise language. Then every province that carried out these regulations, so far as it was possible for them to 'do, would be entitled to receive the grant which the Dominion Government might feel able to give, to assist in solving an extremely difficult problem.

The subject is too extensive to take up at this stage of the Conference. We want a central authority, because Nova Scotia has one plan, New Brunswick another, Ontario another. We have a whole lot of ideas, each one good, but which are not harmonious; and we must have harmonious action before we will be able to control tuberculosis. I do not see any way in which that can be secured, except through the action of a powerful central authority, an authority powerful in influence as well as in funds.

DR. PORTER: It is usual in referring to the work done elsewhere to refer to Germany, Massachusetts, Edinburgh and Ireland, and as Mr. Fisher said this morning, we want a few facts. For a moment, I would like to point out what has been done in Ontario in ten years. In 1899 the Province had one institution for the care of consumptives, with thirty-five beds. At the present time there are twelve separate buildings with provision for five hundred and fifty beds, every one occupied. There are to-day some six dispensaries, ten years ago there were none. There are to-day ten visiting nurses, ten years ago there were none. There are to-day four projected County Sanatoria, there were none ten years ago. There are to-day three educational agencies at work in Ontario, the Canadian Association, the National Sanatorium Association, which is doing a certain amount of work, and the Ontario Government.

MR. WOOD: How much does the Dominion Government give?

DR. PORTER: Ten thousand dollars towards the Canadian Association and the Ontario Government will assume a liability of \$350,000, if the public will take it up. They give \$4,000 towards every sanatorium costing \$20,000. If fifty municipalities should take that up, it would be \$200,000. They give \$3 a week towards the up-keep of all patients on whom not less than \$4.90 is expended. That would be \$150,000 per annum, and is the larger part of the cost. So the Ontario Government cannot be said to be idle in this matter, as they have assumed, providing the public will take it up, an obligation of \$350,000. But they are not willing to do any more. There is not sufficient being done for tuberculosis either in an educational way or in a provisional way. And I support Dr. Fagan's motion, and would urge that either under the Canadian Association, which is already receiving a grant, or under another body, a bureau should be established, where information, statistics regarding the number of deaths, the death rate, etc., could be collected. Perhaps provision might be made for exhibits, for which we get frequent enquiries. This could be done by having a car to go from end to end of the country, with lecturers and also some assistance to sanatoria, which need help. One question is often said: Has this done any good? The death-rate from tuberculosis has gone down from eleven per cent. to seven per cent. in ten years and I think it is fair to assume that that is due to some of the work carried on.

DR. McCULLOUGH: I am glad to hear what Dr. Porter has to say. I might supplement it by stating that, by the sagacity and enterprise of my predecessor in office, the present Medical Adviser to the Commission, there was established a few years ago, a tuberculosis exhibit which is sent free to any town or village in the Province, which may desire it, and we send two men with this exhibit to look after it. It costs about \$10 a day, so, in addition to what Dr. Porter has said, we are now expending on this exhibit at least \$10 a day.

DR. SEYMOUR: I might say a word as to what is being done in regard to tuberculosis in Saskatchewan. During 1909, we had 159 deaths reported from tuberculosis, notwithstanding the fact that our reporting system in relation to vital statistics has been, up to the present time, in a most imperfect condition. A large number of

deaths which take place from tuberculosis are not reported, especially among the Half-breeds and Indians, who form part of the population of our Province. The death rate from tuberculosis among Half-breeds and Indians is particularly large. Tuberculosis is carrying off the Half-breeds at a terrible rate and owing to the prevalence of disease among them, they are a continual menace to the white settlers for whom they work. The most careful information I have been able to obtain with reference to the amount of tuberculosis in Saskatchewan to-day, is to the effect that we have at the present time over two thousand cases, for whom, unfortunately, very little is being done. Last year, with the assistance of the present secretary of the Canadian Association for the Prevention of Tuberculosis, Dr. Porter, who rendered me most valuable assistance, I was enabled to organize about half of the Province into anti-tuberculosis leagues, and we also collected a certain amount of money to establish a sanatorium. The hospitals are obliged, under the present hospital regulations, to provide one-tenth of their authorized bed capacity for the care of cases of tuberculosis. The Bureau of Public Health of Saskatchewan supplements this assistance by giving aid to destitute cases, providing them with tents and supplying them with other necessities in the way of food.

Among the 159 deaths reported, sixty per cent. were among those who were not natives of Saskatchewan, but people who came from other parts. This, I think, points very strongly to the fact that there are others who should take an interest in the work and give us assistance in dealing with this terrible scourge with which we are confronted. Tuberculosis is increasing very rapidly in Saskatchewan, not on account of the climatic conditions, because we have one of the best climates in the world, but because many tubercular people are advised to go West for the sake of their health. A good share of these come to Saskatchewan, and in a short time become a burden on the Province; for there is no disease which so quickly impoverishes the patient as tuberculosis. The Government of Saskatchewan assists hospitals to the extent of 50 cents a day for each patient in the hospital, whether such patients are able to pay or not.

I have recently had a special Order in Council passed by which persons coming from outside points, for instance to the general hospital in Regina, should be the subject of special assistance from the Province. It is not at all fair to bring in patients from all over

the Province suffering from tuberculosis and load them on Regina hospital. So the Government has supplemented this 50 cents a day by an additional grant of 50 cents a day to supply the extras which tuberculous patients require.

We are badly in need in Saskatchewan of a sanatorium for incipient cases. It seems to me that the establishment of a sanatorium in Saskatchewan at the earliest possible moment is urgently called for. I now foresee that we shall have the difficulty formerly experienced in Manitoba. We can get people to make a contribution towards the establishment of a sanatorium, but it will be exceedingly difficult to get the people to continue to give money to keep it up. So it is absolutely necessary in order that this work be carried on as it should be,—and I maintain that this is a national question—that a source of permanent revenue be assured.

I am very glad that we have Mr. Fisher here and I hope we will be able to devise some practical plan to submit to the Federal Government asking for their assistance. I think the controlling of tuberculosis will have to be done by the local authorities, it must continue to be handled by the provincial authorities, and I think a good way for the Dominion Government to do would be to follow the example of the Government of Saskatchewan and make a per capita grant towards the assistance of cases which have to be treated in hospitals and sanatoria. We should immediately have a hospital for advanced cases in Saskatchewan and I do not see how we can keep it up unless we receive a per capita grant from the Dominion Government.

DR. FAGAN: I rise to agree with the statements of Dr. Simpson from Winnipeg, and Dr. Seymour from Saskatchewan, with regard to what cases we are handling ourselves. I am glad to hear of the establishment of the Manitoba institution, although I believe there was a premier institution. I think they opened theirs in June last, but we have been running ours for two years. I happened to look over our lists and the large majority,—I did not count them one by one,—came from Ontario, Quebec, Manitoba and Saskatchewan. I spoke to several of these patients and every one of them was sick when he came to our Province. You may say you should not handle them, but we are not brutes; the distance is enormous to ask these patients to go, and that class of people will not beg. I do not think we have the legal authority to do it. At any rate we try to handle them the best way we can. But I think it is a question for the

Dominion Government to seriously consider whether it is not its duty to step in and assist us. We continue to do it as long as we have a cent. We have the same difficulty as Dr. Simpson and Dr. Seymour alluded to, the difficulty of going back to people year after year. It is not like ordinary hospitals with patients coming in for three weeks or six weeks; it is a question of six months or a year. It makes the patients useless from a business standpoint and they are helpless. You see the load on us as a Province, in handling such questions is enormous. It is not a question of patients coming merely from Winnipeg or other parts of the Dominion of Canada, for there are many cases from Edinburgh and Liverpool. One case from Edinburgh had been in three sanatoria in the Old Country and came as an advanced case. That is only one sample of many. I do not say that I blame Dr. Bryce for that, because I know it is difficult to sight a tuberculous case and hold it up and examine it. That would take weeks and months. But these things do occur, they come in under the authority and approval of the Government of Canada and they are shoved right on to us and we, as human creatures, must do our part to try and assist them. But we cannot do it all, I think that when the Dominion Government realizes this they will assist us.

MR. FISHER: I have been appealed to by a number of gentlemen here. I have already stated on the floor of the House that we desired to aid in fighting tuberculosis. That is not true of myself alone, but, I think, of all my colleagues and most of the members of the House. I will say a word or two in regard to some things that have been said.

In the first place, the Dominion Treasury contributes to the work of the provinces, it contributes to all their work. It contributes a lump sum which the provinces deal with as they choose. A year or two ago, the Dominion Parliament increased the subsidies to the provinces very largely. The whole question of the provincial work and the Dominion work was threshed out and the provincial governments got a very large augmentation of the subsidy from the Dominion Treasury. It was intended to be used as they liked, for public health, education, roads, bridges, or anything else they chose. Under our constitution, local public health is left distinctly and clearly under the control of the provinces, and it is therefore incumbent on the provincial legislatures and administrations to deal with it. Specifically and by name, sanatoria, hospitals, and such in-

stitutions are left to the provincial authorities and distinctly taken away from any control or management or payment for by the Dominion Government. If the Dominion Government undertakes to give a province a grant for public health, there is no more reason for not giving a grant for schools, roads or anything else. We give a lump sum for them to deal with all their work as they choose, and if they are derelict in their duty to the health of their province, it is not our affair.

My friend from Saskatchewan (Dr. Seymour) gave some figures which I have analyzed a little. He says there are two thousand cases of tuberculosis in Saskatchewan. Without knowing exactly, I think Saskatchewan now probably has a population of 600,000 people. Two thousand cases in from 600,000 to 700,000 people is a very small proportion. He says there were 159 deaths last year and of these sixty per cent. were not born in Saskatchewan. Without examining the records, I would say that more than eighty per cent. of the population of Saskatchewan were not born there, and the fact that sixty per cent. of the deaths from tuberculosis is from the population born outside of Saskatchewan, shows that the population from outside is less tuberculous than those persons who were born in Saskatchewan. A hundred and fifty-nine deaths in a year from tuberculosis in such a population as Saskatchewan has to-day is not as great as in many other parts of the country, and I think this is a very favourable showing on which I congratulate the Province. I think very likely Saskatchewan's climate and conditions are more favourable as against tuberculosis than those in some other parts of the country.

The principle of having the Dominion Parliament and the Public Treasury make grants from that Treasury for the provinces for any particular work is, I think, bad. If we are to make a grant to the provincial needs it ought to be done as it is done in the ordinary way of subsidies, and then the responsibility ought to be placed on the people who have the administration of those subsidies. The persons who have the administration ought to be those who are responsible to the individual population for which that money is expended, so that they can be under the control of the people. There is no reason whatever why the Dominion Parliament should vote money to be expended in Saskatchewan, when the people to whom the Dominion Parliament is responsible are situated in all other provinces of the Dominion just as well as in Saskatchewan. I take issue

directly with the idea that the Dominion Government should take from the Dominion Treasury and make a grant to the provincial authorities for a specific purpose. I think it is bad administration, and bad on general principles. If the Dominion Government have to do anything in connection with public health I think they ought to do so under their own officers and their own control and management. The Dominion Government are responsible for their own officials, they are not responsible for provincial officials; and any money from the Dominion Treasury which is spent ought to be spent under the control and management of officers who are responsible to the Parliament of Canada and not under officers responsible to the individual legislatures of the different provinces, over which the Parliament of Canada have absolutely no control. I can appreciate fully that in your enthusiasm for public health you want to get all you can, but it is a bad principle in our federal legislation that because one part of our federal constitution does not do its duty another part should be compelled to do that duty. I have had to bring this matter up on many occasions in Parliament. As Minister of Agriculture appeal has been made to me to do many things. The plea has been made to me: You have lots of money; you must do it because the provincial government does not do it. That is no kind of an appeal to make, and no reason in any shape or form why we should do it. If the provincial governments have not money enough to carry on the affairs of the provinces, if the subsidies from the Dominion Parliament are not great enough for that purpose, let us have another interprovincial conference and decide the question. We did that a few years ago and, roughly speaking, the provincial subsidies were increased by nearly one-third or about thirty per cent. That was only two or three years ago and at that time, with the exception, I grant, of British Columbia, the provinces were contented and satisfied, and agreed among themselves that that increase was sufficient for their needs and purposes.

MR. WOOD: No, the province of Manitoba was not satisfied. I was at the conference and I know.

MR. FISHER: I know some of the provinces have surpluses in their treasuries since, as a result of that increase, and they can spend it on public health without coming to the Dominion Parliament and asking for more. I say these things because apparently your whole attention and thought has been turned towards getting the Dominion

Parliament to do more for the public health. This Commission of Conservation does not make recommendations to the Dominion Government only. It is its duty as a Commission to make recommendations to any government in Canada whose duty it may be to deal with the subjects under consideration, and it is as much the duty of the Commission to recommend a course of action to a provincial government or legislature as to the Dominion Government. I think it is well to think of these things and to understand them fully, and not to simply turn this meeting into a raid on the Dominion Treasury.

MR. OSLER: I agree with Mr. Fisher to a very great extent, but I do not agree with him in any sense in thinking that this is a provincial matter. This is a Dominion matter, probably the most important matter in the Dominion to-day—the deaths of 10,000 people. We are told there is a cure for it. Some means should be devised to bring that about as soon as possible. It is difficult matter to get the older municipalities to take steps because they do not realize the importance of the subject. Take a province like Ontario. I think it is being educated up to a sense of what it ought to do in providing for these cases. But in the great West, the provinces, comparatively speaking, are poor as yet. They have a great deal to do with their money, and it is very difficult indeed for them to provide the amount of money that is necessary in such a case. I do not think that this matter should be looked at in any shape or way as a question pertaining to any one province; it should be a Dominion question. The Dominion should, either through this Commission or in some other way, negotiate and confer with the various provinces, find out what their needs are and try and devise some means of carrying out a campaign against this terrible disease. We are told that if it is properly treated it can be stamped out of Canada within a reasonable number of years. Surely then it is something that ought to be a Dominion matter; not that the Dominion need bear all the expense, but some means ought to be devised whereby a system obtaining from the Atlantic to the Pacific should be employed to give relief to all this suffering, when we have a known cure. If, in twenty-five or thirty years, we can become a nation with no consumption among us, is that not worth some sacrifice? Is that not worth making a great effort to obtain?

I do not suppose that this Commission can accomplish very

much but I would like to see it bring in or bring about in some way a report covering all Canada and suggesting how in each section of the country this matter should be dealt with. In some way, we should give an estimate of what the yearly cost would be for some time to come. It is a fine work to do but before it can be taken up effectively as a whole, as it ought to be taken up if it is to be effective at all, some such report ought to be submitted. If that report is submitted and statistics published, we can soon educate the people into willingly spending enough money to check the ravages of the disease. In the case of the Western Provinces I recognize the difficulty of raising enough money to establish what ought to be established.

DR. SEYMOUR: Hear, hear.

MR. OSLER: In Ontario and some of the older provinces I think they should do it themselves without question, but the matter should be taken up as a whole and directed from a national, and not a provincial, point of view. If there is any one section of the country not able to supply the money for what may be necessary in hospital accommodation and attendance, I think it ought to be supplied in some way.

People must learn to realize what it means. They have taken it as a matter of course to see their friends and others dying of consumption. We do not realize that it is a preventable disease. If it were the plague, there would be an outcry very quickly about it.

I do not see how we can accomplish very much here, but I would like to see some suggestion made as to how a comprehensive and efficient report can be had of the conditions in Canada, how they can be met and improved. Let us face that and try and educate the provinces and municipalities, and, if necessary, have a Dominion grant for the particular purpose because this is not a provincial matter, it is also a Dominion question. If we can do that we will have accomplished something. I do not think there would be any great difficulty in devising means and raising money once we saw what was needed and what the effect was going to be.

DR. BRYCE: I presume this discussion will be resumed to-morrow. The Committee has asked leave to report.

DR. FAGAN: Might I ask Mr. Fisher if it is competent for us in British Columbia to stop a patient who is suffering from consumption, coming from Manitoba, Ontario or Quebec into our Province.

DR. FISHER: I do not think so. I would not say positively because I am not a lawyer.

DR. FAGAN: Because if the Dominion Government takes the stand indicated by Mr. Fisher, I can say positively in British Columbia they will adopt such a law if it is needed. But Mr. Fisher said that if they granted this they would have questions of schools and teaching and other little matters coming to the Government. The governments of the different provinces, as far as I know, have never complained. They are shouldering their other burdens, but they feel that this thing is not solely their question. It does not belong to them, and it is not fair to us to ask us to treat Ontario and Manitoba patients. The question is so huge and overwhelming that they feel helpless in the matter. It is a question of the lives of Canadians and it should be a Canadian question, and we should join hands, the Dominion, the provinces and the municipalities, in trying to save Canadian citizens.

DR. BRYCE: There is a matter connected with this that I would like to mention. It is in the matter of the incoming settler. It has been the habit of the Department of the Interior, as representing the Government, that if an immigrant "went bad" during the first year after his coming, the Dominion Government paid a definite amount for hospital expenses. That is a fair thing seemingly. In the prairie hospitals, at any rate, it has been done.

DR. FAGAN: It has been refused to us.

DR. BRYCE: That is another question. They said, and the question seems to me to be one the Western Provinces felt most, that the Canadian from the East goes West, because he thinks the climate will be better for him, and he goes bad. It seems to me, leaving out all other questions, a difficult thing and a hardship for the Western Provinces to have to keep such a patient in a hospital for months, or it may be for a year or two. There ought to be some way to deal with that class. I cannot see the way to have that worked out, but I can see that it is a case that presses most on the Western Provinces. But Mr. Fisher's point is well taken that the Western Provinces are not as tuberculous as the Eastern. The provinces by the sea have three deaths to every one in the West and the question arises how are we going to help all these sufferers. As the Chairman of the Committee says, it must be worked out by proceeding along practical lines and seeing if we cannot help the provinces to save lives. It does not matter where the money comes from if we are saving lives.

The Conference adjourned until Thursday morning.

Thursday Morning Session

The Commission resumed at ten o'clock on Thursday morning, Mr. Osler presiding.

HON. CLIFFORD SIFTON: Mr. Chairman and gentlemen, we are to get the report of the Committee on Tuberculosis* this morning. Please do not laugh at any suggestion I may make because I do not profess to be an expert. If there is any wheat in what I say please take the wheat and leave the chaff to one side.

My notion about what we might do in connection with tuberculosis was that we should, if possible, do something in addition to what is being done already. No one is finding any fault with what is being done already; it is being done as well as it can be done with the means at the disposal of the people doing it. What we want to do, if we can, is something in addition, to find a field in which the Federal Government can effectively act. A suggestion has often been made which has struck me as extremely practicable, and I had hoped that perhaps some means might be devised at this Conference to carry it out. It is this: to find somewhere a very large tract of land where the climate is especially suitable for the care of patients affected with tuberculosis. This could be taken in charge and, in a small way perhaps at first, but subsequently, in a larger way, a place could be provided, where tuberculous people, who are living in towns and cities, and have no hope of recovering, could go and find a rural home. Some men would be able to pay for it themselves, others would have to be helped when they went there. But you gentlemen, are all familiar for instance, with the condition at Saranac where the whole population practically consists of people who have, at some time or other, been affected with tuberculosis. People go there and stay there; they are afraid to move away. It is practically a community of people formerly affected with consumption. It seems to me that as a start, in connection with the national work, if we could find in Canada a place where a very considerable tract of land could be procured, and where we would be in a position to say to any man, anywhere, who was affected with tuberculosis, and saw no hope of recovery, you can come here and live a rural outdoor life, it would in time grow to be a great institution. I do not

*This report in its final form will be found on page 170.

think that such a plan would present any great difficulties. I know myself people that would go there, if there were such a place. I presume there is no man here who does not know people who, if they had the opportunity, would go to such a place. I have thought about that a good deal. I do not know if it is practicable or not, but there is a place in Northern Ontario where, so far as my information goes,—I have no medical advice on the subject, but the popular opinion of the people there is very pronounced regarding it—there is a tract running from Englehart, on the Timiskaming and Northern Ontario railway, along the height of land, that would be very well worth investigating. The mining people who are there tell the most extraordinary stories about the cures effected in people going up there affected with lung trouble, who have gone there without any thought of getting cured. For instance, a man is said not to be able to have a cold in that climate. I have spent a little time there myself, but not long enough to be able to make any observations. There, any quantity of land could be got very cheaply. Most of the land is still in the hands of the Ontario Government, and the rest of it is occupied by settlers who would sell at a very low price. The country is good land, excellent farming country. The general impression is that it is not good land, but as a matter of fact, most excellent crops are raised there, and if on investigation, it was found that the climate is of the character it is said to be, I do not know any place more suitable in every way for having a large tract of land where outdoor treatment could be adopted on a considerable scale.

I make that suggestion because it seems to me that something of that kind will have to be done, if we are to deal with the question on a large scale. The adoption of this plan would enable the Federal Government to say to all the people of Canada: We cannot undertake the health administration of Canada, that is a duty of the provinces; but we can do something the provinces cannot do, we can furnish a place where consumptives can go. If that can be worked out in a practical way, it seems to me we would be doing something substantial in the way of making an advance. I just make that suggestion so that it can be considered. I will not feel in the least degree disturbed if you gentlemen find there are features of it which are not practicable, except that I shall feel sorry that what seems to me to be a practical proposition, cannot be worked out. If that cannot be done, I would like to see something done on similar lines.

MR. OSLER: That is a very practical suggestion.

DR. BRYCE: One of the provinces, the province of Saskatchewan, is now considering the advisability of just such a scheme as Mr. Sifton has suggested, and Dr. Seymour who is here, has endeavoured to obtain a part of the reserve of the Cypress Hills, which you know is in the south-west corner of Saskatchewan, with a view to doing there what they have started in New Zealand, viz., taking the sick consumptives to the place, and when they are better, or partly better, setting them to work in the forestry work. They are actually doing that in New Zealand and doing it very acceptably, both to the sufferer and to his health, and it is hoped by Dr. Seymour's Board, that they can do the same thing in the Cypress Hills, a beautiful district, which I visited recently, thirty-five hundred feet above the sea, and running up from Maple creek about fifteen hundred feet in twenty-five miles.

MR. SIFTON: Is it in the hands of the Federal Government yet?

DR. BRYCE: It is still in the hands of the Federal Government. The real difficulty that has been found everywhere is the fact that ninety per cent. of the people who have consumption belong to the labouring classes to whom the question of next week's living wage is the all important one. Let me illustrate that. In this city with a hospital now ready for fifty incurable patients, there were last week, with a dispensary at work, and with a visiting nurse at work, only twenty-five sick patients in the hospital. And our nurse tells us that the real difficulty is that the man must work as long as he can. Then the people at home raise some objections about letting him go, the wife wants the husband near her, and there is no progress. That is the essential difficulty in this particular matter. It occurs to those of us who have worked at it a great deal, that the important problem is the one that came up yesterday, for which it was attempted to suggest a solution in an addition to the report. I shall read, Mr. Chairman, with your permission, what I have put down. It would form matter for discussion because it may or may not be incorporated in the report.

Dr. Bryce's memorandum, which was subsequently incorporated in the report of the Committee referred to the establishment of tuberculosis farms.

After reading his memorandum Dr. Bryce said: The real difficulty that every worker has found is to get the poor people to leave

their homes, even to go to a local sanatorium. The larger question will be a matter of education, but the problem of to-day is to help the ten thousand people who are going to die this year out of the home, and to save others in the home.

Dr. Fagan then read the report of his Committee as previously submitted.

DR. FAGAN: I have heard Dr. Bryce make the statement that they have a hospital in Ottawa, with accommodation for fifty cases and can only get it half full. Well, I have taken an interest in this subject in a practical way for a longer time than Dr. Bryce has, notwithstanding all his experience, and I cannot say I can confirm that.

The percentage of advanced cases of tuberculosis is so high that in connection with any hospital I have ever known established for that purpose, and properly managed, the difficulty has been to find sufficient room for the cases offering. We have established in British Columbia a small hospital within the last three years, and it has been constantly full and numerous sufferers have been waiting for admission. However, we can say this with certainty, that at least fifty per cent. of the advanced cases will look for treatment, especially if there is any hope of arresting their disease or checking its advance. If there is any such hope held out, they will look for treatment. When they get so advanced that they are in a dying condition, they will always go. That is my experience. A large percentage will try to seek comfort, and in the present state of information, they like to leave their homes to save their families. They get to realize that the responsibility of infecting their family is on their shoulders, and when they are asked to leave their homes and go to an institution at least fifty per cent., I should think, acquiesce.

MR. SIFTON: May I ask a question? Is there a considerable percentage of cures effected in the cases of persons who are not removed from their ordinary environment, not taken to a separate place like a sanatorium? Is there a considerable proportion of the cases cured who are treated in their own homes?

DR. FAGAN: Yes, certainly.

MR. SIFTON: Is that the medical experience?

DR. FAGAN: Yes. Of course, the treatment of tuberculous cases is threefold. There are three things that are essential. Fresh air, all the time; they can get that at home. Good, plain nourishing food; they can get that at home. Rest and exercise under expert

supervision; they cannot get that at home. Each one of these is as important as the other. You can get two of these at the patient's home, but not the third. That is my experience, and the experience of men I have spoken to. .

DR. BRYCE: Hear, hear.

DR. FAGAN: The rest and exercise is as important as the food and fresh air, and it is only with a certain class of people you can get it. They will not lie down but will go and take exercise that ruins the whole condition. They do get results, but of course, the percentage is much lower than what you get in institutions. The advantage in an institution is that even if they go for only a couple of months, they get to know all these things, and if they have hopes, they will follow out the course of treatment. But it is only when they are actually under authority that they will take the proper steps. They are like children and have to be handled like children, with firmness and decision.

MR. OSLER: I do not see that there is any conflict between the report, Dr. Bryce's memorandum and Mr. Sifton's suggestion.

DR. BRYCE: None whatever.

MR. OSLER: I think they follow one another quite naturally. I believe most firmly that the Dominion Government ought to contribute towards the relief of those who are ill. In what way it is to be done, is something to be worked out. It might be a good thing to have a law passed enabling judges to force the municipalities to provide sufficient accommodation. If you could force the rural municipalities of Ontario to contribute something towards looking after the consumptives within their own borders, and if the Dominion Government would contribute something and the provincial government contribute something in each case, you should have several sources from which to obtain funds.

Mr. Sifton's suggestion of establishing a central consumptive farm, would be an object lesson of enormous importance. Those of us, who have been at Saranac, and know what has been done there, and what the facts are, realize that.

MR. SIFTON: There might be more than one; the suggestion to have such a place in the Cypress Hills is based upon the same idea.

MR. OSLER: That idea is a plan that the Dominion Government might very well approve of and considerably aid. It might also, I think, be pressed to contribute so much per day per patient. I

look on this not at all as a provincial matter. The Dominion Government is, I think, quite entitled to be called upon to use all its efforts to stamp out this disease. If the decline in the death rate in Germany has been brought about as the result of government supervision and education, it is such an object lesson that I do not think any Government can afford to ignore it, no matter what the cost may be. Such a plan should be adopted as will produce results equal to the results produced in Germany, and I would suggest that this report and the suggestions made here, together with Mr. Sifton's most valuable suggestion, should be combined, and that we should have one report covering them all.

DR. BRYCE: Mr. Sifton's suggestion will follow very properly the suggestion there of a definite method.

MR. OSLER: A definite method in which the Dominion Government can be asked to help. If that meets the approval of the Committee, I shall ask it to re-draft its report embodying these three.

MR. SIFTON: We have two or three documents, all of which are perfectly consistent with one another and I would like to have a report with which we could go before the Federal Government, that would be specific and definite in its character. It would not look well for us to go before the Government and say: We have had all the health officers of Canada here, and they simply advise you to take the matter under your charge and contribute a certain amount to the provinces. They would say: Yes, but can you not suggest something of a definite character to improve the position, to take a step in advance and do something more than has been done before?

MR. OSLER: That would be contained in your suggestions.

MR. SIFTON: If that meet with approval, my idea would be, to act now when the lands can be got cheaply before they have been secured by private individuals. In the United States when they want to do anything like this, it costs millions. The land in the Cypress Hills can be got for practically nothing, and I suppose the Ontario Government would not object to giving a large tract in New Ontario, almost free, and possibly in British Columbia, something might be done. It is largely a question of climate, but in different parts of the country we might find places where these institutions can be established. They would not be large institutions at first, but they would grow. If we had that in our report, and some practical suggestion as to improvement in the provinces, as the result of

Dominion expenditure and effort, it would be of great assistance. It is no use going to the Federal Government and saying: We want you to contribute twenty-five cents a day to our hospital patients, unless you can show that something more is going to be done as a result of that money being paid. If we can show the House of Commons that, by the expenditure of this money, the administration in regard to tuberculosis will be improved, that something more will be done than is being done now, they would have a good reason to furnish the money. We should redraft our papers and get all these suggestions in practical shape.

DR. BRYCE: When in 1900, the County Sanatoria Act of Ontario was passed—I think I was responsible for it—the idea which was contained in the body of the Act was that in the case of any county sanatorium that is approved as to site and building by the Provincial Board of Health, each municipality from which a patient comes must pay \$1.50 a week, and the Province would pay \$1.50 a week continuously. There is \$3 out of the assumed \$7. Now the Province has done better and gives fifty cents a day. The condition imposed was provincial inspection to insure efficiency and the management by a Board appointed by the County Council. That has worked out so well that Dr. Porter said yesterday that there are, I think, six counties that either have their sanatoria or have them in process of construction. That is the basis upon which the municipality and the Province are doing their work. It is the only way in which the thing has ever worked down to the unit of the municipality. Now it is quite clear from the figures we have heard, that there are at least ten thousand people urgently demanding that help, because ten thousand people will certainly die this year, probably more. Now if you take that as a starting place, then it is only fair, it seems to me, that if you can assist these by a little Federal Government money, you have assisted in establishing more sanatoria because more counties will take it up. It is all a question of maintenance. The other provinces have larger areas and the population is sparse, but they will do and are doing the same thing. Manitoba has its own provincial one, as compared with our own county ones. But if Manitoba is to-day, as we were told yesterday, providing about \$10 a week, for each patient, and still, as Dr. Simpson told us, they had to draw on a special fund, even to keep the hospital going last year, because the Government did not give them

enough funds, it is apparent that if they can get more money, a large number of patients that are to-day going untreated, and so creating more cases, can be dealt with. We must recognize that very, very many of these cases are creating more cases. Tuberculosis is like small-pox, it is no use merely to discuss the question; you have to get the first case of small-pox and stamp it out or you will have more. Tuberculosis is slow, it is chronic. You can go to the houses of the poor in this city and find four families in five rooms. That means that you are creating more cases unless you can get them out, and the only way that I can see is for the Federal Government to encourage the establishment of these sanatoria and hospitals locally for the time being. The larger ones will follow with education, and that is why I have put this concrete case of the number of cases and what they will cost. They occur mostly among the poor people and if we do not take them out of the houses, we will have more cases.

MR. SIFTON: I saw that you were in difficulties in Manitoba about funds. Have you a special institution in Manitoba for consumptives alone?

MR. WOOD: Yes, for incipient cases, in Southern Manitoba at Nanette.

MR. SIFTON: I am aware that you were in difficulty about funds last year.

DR. SIMPSON: Yes, the asylum was largely built by voluntary contributions and support, and failing that, when we got into more difficulties, the Government gave us \$25,000 towards the building fund and furniture. After we practically had the hospital built, equipped and formally opened, we found that the water supply and other things were inadequate. In the meantime we were short of funds, and we felt we should have to close the institution, if something were not done. We had gone to our friends and asked them to contribute, and they did so liberally, and we hated to go back to them. So we established what is called "Tag Day," to get money to build a sanatorium for the advanced cases. This the Board of Health agreed to do. After they had built the other institution, they said: We will take over the one for advanced cases. We established a Tag Day and throughout Manitoba in one day, although the day was a very bad one for the occasion, being damp and threatening, we collected in the neighbourhood of \$30,000. It was a matter of closing the institution or else getting money somewhere, so the Board of

Health proposed that we hand over to the Sanatorium Board a portion of this fund. Of course, it created a great deal of disturbance, because people said we had collected this money for a specific purpose and we were giving it somewhere else. I said that legally we were wrong, but morally we were right, and we gave them \$15,000 of that fund. Now we think we will be able to maintain it with the contributions which are received in connection with the patients. The municipalities contribute one dollar and the Government contributes forty cents a day, and we hope to be able to maintain the hospital in that way, with perhaps slight additions from our friends.

MR. SIFTON: The reason I asked was that we might get some really practical idea as to the difficulties that are being encountered.

MR. OSLER: The Muskoka homes are always full; you cannot get admission.

DR. HODGETTS: There is always a waiting list.

MR. OSLER: There is always a waiting list, even for pay patients. The home for advanced cases established near Weston, in which my late partner, Mr. Hammond, took an interest, and towards which his friends raised a fund of \$50,000 is always crowded to over-flowing, and there is always a waiting list.

MR. SIFTON: Would there be anything in this idea, that we should suggest to the Federal Government certain contributions to be made upon the condition that the accommodation for tuberculosis patients should be increased by a certain amount?

MR. OSLER: Oh yes, I think they should not be asked to give towards those already established and going.

MR. SIFTON: If we can go and show that there is a large demand for increased accommodation, and the financial resources are not available, we might say to the Federal Government: The people have done all they can, they have given all they can give, additional accommodation is required, and we want your help.

DR. BRYCE: The difficulty I see about your proposed course is that you are going to bonus the new people, who have done nothing so far, but are not going to assist those who have already established institutions.

MR. OSLER: I was referring more to the institution of new hospitals, not to the maintenance.

DR. BRYCE: My suggestion is that twenty-five cents go for every patient in an institution. If we give twenty-five cents a day, it will

encourage each province and municipality to establish new homes.

MR. SIFTON: The Government could hardly give the money assuming that increased accommodation will be granted. They will have to make it a condition.

DR. BRYCE: The idea is a per capita grant for patients already in the place.

DR. SEYMOUR: We had last year in Saskatchewan 159 deaths from tuberculosis. That does not include all the cases among the Half-breeds and Indians, but still we had 159 deaths from tuberculosis. Sixty per cent. of these were people not native-born in the Province. We have to-day two thousand cases of tuberculosis in the new province of Saskatchewan, for whom practically very little is done. Our hospitals are obliged to provide one-tenth of their authorized bed capacity for tuberculosis, but that does not meet the necessities of the case inasmuch as our hospitals are overtaxed with the care of emergency cases. We are trying to establish a sanatorium in Saskatchewan. One-half the Province has been organized into societies with the assistance of Dr. Porter, and a certain amount of money has been provided, but we see the same difficulty that they have in Manitoba regarding the maintenance. People frequently object to the principle on which we establish the work. They say this is a government measure, and the government should take it up. I find it practically impossible to get the Government to take it up, unless we can persuade the Government that the people are at the back of it and want to have it done. I am endeavouring to get the people to subscribe enough for incipient cases and then hope to have the Government establish an institution for advanced cases. If we could say that there was some prospect of receiving federal aid towards maintenance, it would assist materially in raising money for the establishment of a sanatorium.

DR. FAGAN: In my little experience, I have found that for two years, the actual results show that our cases cost us \$2 and some cents. That is for medical attendance, nursing fees and everything. Twenty per cent. paid the full charge, that is \$14 a week, and the balance paid us various sums from \$3 to \$10 a week. We had a government grant of about \$4 to \$5 a month per patient. The balance was made up by societies that we have all over the Province. These societies do a tremendous amount of good work. Their object is to collect money for persons who cannot pay, to look after local

cases and to see to educational measures. They have talks with the school teachers on the subject, and we have a special chapter in our school books on that question. The preachers are asked to preach a sermon, I believe once a year, and the municipalities are approached to give us assistance. Most of our large municipalities have given us \$30 per thousand of their population. By these means we are getting on.

MR. OSLER: How many cases have you under treatment?

DR. FAGAN: We have twenty-six. We opened a new place the other day, and we will be able to handle ninety-six cases.

DR. MCCULLOUGH: Of course, we are all agreed that the question of curing tuberculosis depends on money. Now yesterday afternoon, we were told very emphatically by Mr. Fisher that the Dominion Government would not give any money for this purpose. He said the Federal Government would not give any money towards hospitals or institutions in the provinces, because it would not have any control over them. If that is the case, it would be useless to ask such aid.

MR. OSLER: I think Mr. Fisher modified that by saying they could not contribute directly. He did not say that the Federal Government could not assist in some other way. He did not imply that in other ways, there might not be assistance.

MR. SIFTON: There are many roads to heaven.

MR. OSLER: I do not know whether you are all readers of Smollett, but in "Humphrey Clinker," Smollett writes in 1750, that he is at Bath, at the bath. He goes out of it, because there is the contagion of the consumption there. He says that in Italy there is a law that where a patient dies of the consumption, the bedding and clothes are burned, and no other one is allowed to live in the house until it has been whitewashed and disinfected. We are trying to get in something like the state the Italians were in two hundred years ago.

Would the Committee undertake to presently combine these three reports and Mr. Sifton's suggestion as to the organization of a central farm?

DR. HODGETTS: Another matter is the question of sick insurance. That is a very important question. I believe the Minister of Labour has it under consideration now. It has an important bearing on this very matter. For instance, if employers of labour had their

employees insured, and these employees were put into sanatoria, there would be money for the support of their families. That would be an important consideration in the treatment of tuberculosis. It has been considered in Germany and has been worked out there. In other portions of the world also, they are considering that question.

MR. SIFTON: We have a report here from one committee on a central council and a national laboratory which recommends the establishment of a National Council of Health. The Committee on Tuberculosis working independently, recommends the establishment of a tuberculosis bureau. Of course, there would not be any necessity for establishing the two bodies, the National Council of Health ought to include the tuberculosis bureau. If we could, in deciding upon a report for the establishment of a National Council of Health, present a report combining the different ideas that seem to meet with approval, as a basis for the consideration of the Council and with which basis they could approach the Federal Government, we would be doing something practical, putting something in their hands which would enable them to approach the Government with some chance of success. Of course, as soon as you go to the Federal Government, and ask for a sum of money, to be placed at the credit of a province, you raise a question as old as Confederation, and it will have to be taken hold of in some way that promises success. I would not despair of getting substantial assistance if we can show that we have something practical, but if we go to them and say we want them to contribute a share to hospital cases, we will not get a cent. If we can show that, as the result of assistance given, institutions will be established that are not now established, that additional accommodation will be provided, I think we can get the money; and what is more, we can get the money for the establishment of these large tracts or farms for the treatment of the disease. I am satisfied we can accomplish a great work in this way.

DR. MONTIZAMBERT: There is one question in connection with the matter of Federal aid which I would like to mention, and it is not so much a question of the extension of Federal aid to all the Dominion, as of expenditure on the part of the provinces in taking advantage of the present Federal aid. The Government now gives \$10,000 a year to the Canadian Association for the Prevention of Tuberculosis, for educational purposes. A considerable portion of that money is spent in printing and circulating leaflets, pamphlets

and other educational matter in connection with tuberculosis. If I am correctly informed, each province of the Dominion expends a considerable amount of money in doing exactly the same thing, so the work is multiplied by nine or ten. Now if, through the Secretary of that Association, Dr. Porter, the provincial authorities could agree on the class of printed literature that they want to have issued to their people, and let that all be printed, and sent to them for distribution, through the Canadian Association here, out of the funds already granted by the Federal Government, that would at least cause a certain diminution in expenditure, for that class of work. The saving effected in this way could be applied to maintenance of the patients.

MR. OSLER: Dr. Bryce, you have a statement in your memorandum that each year ten thousand households become impoverished. That is an assertion that there are ten thousand adults who die of consumption.

DR. BRYCE: As a matter of fact, nearly all of the consumptives proper and two-thirds of the actual deaths are of people between the ages of twenty and forty-five.

DR. FAGAN: If the movers of these papers would meet our Committee, we would be pleased to combine all the documents in one.

DR. McCULLOUGH: I beg to present the report of the Committee on Pollution of Waterways.

Dr. McCullough then read the report as given on page 166.

MR. OSLER: Is it your pleasure that the report be approved as submitted?

MR. SIFTON: The draft bill is practically dealing with the pollution of navigable and other waters. It provides for the promulgation of regulations. Of course, the regulations are the kernel of the whole thing. The clause in the bill provides that the Minister shall promulgate the regulations. That is quite right, that is the proper form, but it should also provide that the National Council of Health shall draw the regulations and have them approved.

Dr. Hodgetts read the draft bill. He said: These regulations would have to be recommended by a Conference such as we have here to-day.

MR. SIFTON: The effect of this is that no sewerage system can be put in without the inspection and approval of the Provincial Board of Health concerned.

DR. McCULLOUGH: That is the law under the various Public Health Acts of the provinces already, but they evade that. The only way to prevent evasion is to have a clause in the Act making it impossible to raise money on debentures, unless they put in the by-law a clause such as that which has been adopted in Saskatchewan. We have an act in Ontario without that clause. Saskatchewan is the only province that has that clause, and we have here adopted it and put it in the report.

Dr. Hodgetts read the report of the committee on Harmonizing of Health Laws as given on page 153. The report was adopted.

Dr. Montizambert read the report of the Committee on Central Council of Health and National Laboratory as given on page 155. The report was adopted.

Address on Tuberculosis

Dr. A. P. Reid, Provincial Health Officer, of Nova Scotia, then delivered the following address:

Mr. Chairman and Gentlemen,—It gives me great pleasure to address you to-day and to hear the discussions, but I must at the same time say that there are many, many things that are apparently accepted by this Conference with which I am not in harmony. In the first place, I wish to say that I have been practising medicine sixty years. That does not prove anything. But assuming that I had ordinary observation, necessarily I would be able to accumulate a few facts. About twenty-five years ago, I first set to work at trying to treat this subject of tuberculosis, and laboured under the idea, which is prevailing here now, that by getting sanatoria and having things exactly right, we were going to do something in the way of treating tuberculosis. After working on that for years, I discovered that I was travelling on false lines. You might say why! I think our Province was the first one to establish a provincial sanatorium. I was very much interested in that, but I have recommended that that institution be burned down, either accidentally or otherwise. I will tell you why. I think that we ought to have every infected house in the country itself a sanatorium, that we do not want to collect cases from all around and set up a place to cultivate the disease. What we want to do is to take care of people in their homes. That is where you can get them well. Our institution costs \$15 a week per patient. The

patient contributes \$5, and there is a fixed charge of about \$100 per year per patient as interest on the money invested in the institution. If we could go out into the country, and make arrangements to treat people in their own homes, nine-tenths of them would be able to very nearly support themselves, and \$15 a week would go a long way towards supporting more than one patient. You could support nearly half a dozen for the same amount that it now costs to support one.

There is another thing I wish to point out. Not very many really sympathize with the unfortunate patient. That is the man I have the most sympathy for. Being in hospitals has put me in a position to sympathize with the patient. Take a man away from his home and his work, and put him in a hospital where he has nothing to do but think about his sickness, count his pulse and go to his meals, and you give him a form of amusement that is, to say the least, not especially interesting. What I want to do is to have things so arranged, that a man may be occupied all the time and occupied in the ordinary way, at the same time that he is getting well. And what does he want to get well? Nothing but plenty of fresh air, sufficient food and exercise and intelligent supervision that will direct his effort.

I have made recommendations to our Government which I assume, will not be carried out at present, and which would involve an expenditure of about \$100,000 a year for our Province. I was speaking to the honourable Minister of Finance, Mr. Fielding, yesterday and I told him what I had recommended, and said that I did not expect it would be granted. He said: Continue the work. The Scriptures, in spite of higher criticism, I think, on the whole, are correct: by much asking, you will receive. Here I think by much asking I will very likely get what I have recommended. What I want is to have, not a place in which to collect the consumptives, but some intelligent individual who will visit every house, every hamlet, every workshop and every office in the district where he is placed, and pick out the sick men there. He has nothing to do but to report to the health officer of the district that these people require attention, and the health officer is then the man to see that the sick person receives care. This care will be modified greatly by the condition of the man. I am not speaking of the criminals or tramps otherwise provided for. They have a great immunity, the tramps, I suppose because they are a great deal in the open air and never take exercise

that hurts them. I never saw a tramp who had tuberculosis. What I want is that our people who are not tramps shall have as much advantage on the score of health as tramps. There are two classes: first of all, the people living in the country; and second, those crowded in cities. The arrangement which suits one is not necessarily suitable for the other, and my remarks chiefly are with reference to those living in the country, where, of course, the greater part of our population lives.

If we take charge of the incipient cases, we will have no advanced cases, and we do not want any hospitals or sanatoria anywhere. Our Attorney General last year passed a law, fining a doctor \$25 to \$50 for not reporting cases of tuberculosis. I said: That is the wrong principle. In the first place, you assume that when a man has consumption, he goes to a doctor. He does not; and very often when he does, he is beyond hope. In the second place, it is assumed that a doctor can diagnose the case of every man who goes to him, another question that can be argued very freely. Then, it is assumed that a doctor will convey to a third party information about private patients. That is a thing which he has a great objection to do. Then, again, if that doctor does work which to be of any service, requires a large amount of labour and intelligence, he deserves pay for it, for otherwise in this world, we generally get nothing for nothing, and if you want to get good professional work from the doctor, you have to give him some consideration for it. The ordinary law does not give him that. Hence, I consider that the regulations which have been made with regard to notification, might as well be written in sand, because they cannot be carried out. They are not practicable because I question if one patient out of a thousand knows he has tuberculosis until he is pretty far advanced.

An inspector should go around the country and visit every house and workshop. He sees a man there possibly a little weak, possibly with a slight cough, possibly not as strong as he was. That man has not necessarily got tuberculosis, but he may have. But that man, whether he has tuberculosis or anything else, should be placed in a position to have his health restored. Ninety per cent. of all our tuberculosis cases get well and never know they have had the disease. By the time we are thirty years of age, perhaps most of us have had tuberculosis. I am not sure that I have not had it a dozen times. Hence it is the ten per cent. who do not get well who should be at-

tended to, and the time to handle them is before they get sick enough to drop their work.

Then you must understand that our people are like yours, they are not paupers, they object to being dealt with in that way. I want them to understand it is a debt and not a loan, I want them to understand that society has a right to support all those who have performed their life's duty to the best of their ability. When a man gets sick in the performance of his life duty, that man is entitled to receive support from society. Our law now recognizes that our municipal authorities are in a position to assist those who require assistance. But this is not done in the proper spirit, it is done more under the guise of charity, and that is against the feeling of the majority of our people. Probably the class of people who suffer most from tuberculosis are those who fill our workshops and mines and perform all the labour of the country, and they are all high feeling people, although they may be sick. What I want is to have every family, every sick person, looked after at home. At least fifty per cent. of the cases, if they were told at a sufficiently early time that their health was in danger by some one who had the ability and the authority to give them that information, could be cured with scarcely any requirements in the way of hospitals or anything else, because people would take care of themselves before they got sick. How is it with you and me and the others? We do not wait until we get sick before we take means of relief, and it would be a great advantage if the poor people would do the same thing. But you know we are all apt to travel along the line of least resistance. A man is not well, but he does not want to give up his work. He goes on along the lines he is accustomed to travel on, until he gets down so far, that it is impossible to lift him up. How many cases do I know of men not very sick, as they think, carrying on their labour; men who have a lung half gone and are likely so far down that their chances of recovery are slight! What we want is to stop them, and the only way to do it is by having some official visit every sick person. You would not only handle tuberculosis in that way, but every variety of disease at the same time, and as soon as we can look after a man properly, he can be placed under conditions giving him the best chance of recovery, whether it be a case for surgical treatment or anything else. Without a hospital for tuberculosis you can have the man made well, you can get the ten per cent. who die, through into the ninety per cent. class who get well and never know it.

The whole field is so large that to speak of it, even in a cursory way, would take up much more time than is at your disposal, even if I had the ability to handle it properly. I do not know if many of you have thought of what we are really up against. The tubercle bacillus is an extremely small thing. A drop of water an eighth of an inch in diameter will contain five times as many bacilli as the whole population of the earth, human, and bovine and equine. It is not the large things that give trouble but the small things, and the smaller they are the more trouble they give. A grasshopper does not amount to much, but how often do you find that the best locomotives and the biggest trains in the country have been blocked by a mass of grasshoppers! We are practically in the same position. We are thrown up against a mass of little entities having great vitality, which subsist under extraordinary circumstances, and we do not appreciate them at their proper value. I would like a little consideration given to that. Hence, when the question of treatment comes up, if you take a consumptive patient out of the house and put him into a sanatorium, you do not leave that house a bit better than it was before he left it. You may try to disinfect it, but you cannot be sure that you have succeeded, and if you did succeed in disinfecting the house, you could not be sure of the individuals in the house. Hence, you have a lot of tubercular centres in the country, and you are not sure that you are handling them as they should be handled. But if we make every house a sanatorium, and treat consumption properly, we can control it, and it will cost less money than the plan we are adopting now.

Before we can succeed, it seems to me the effort has to be made and no systematic effort can be made except through a central authority. Therefore it is for the Federal Government to advise the provinces. Our provinces are extremely sensitive about being controlled, yet with proper management, it is possible. But they can be controlled more by management than by force. We do not want to use that, and the best force we can use, is for the Dominion Government to give a donation of such an amount as it considers best, to those who comply with the requirements laid down by the central authority. That central authority will harmonize the work of the different provinces. I am sorry I have had to take so much time in making a few very bald remarks, and I regret I have not been able to handle the subject in the way I should like.

Dr. Hodgetts suggested that the report of the International Commission on the Control of Bovine Tuberculosis be endorsed.

MR. OSLER: How far do the recommendations go?

DR. HODGETTS: They deal with the tuberculosis test and the disposition of tubercular animals. The recommendations refer to dealing with herds and the breeding from the herds. That is virtually the whole question of the extermination of tuberculosis in cattle.

On page 14,* there is a discussion of the relation of animal tuberculosis and public health. It is expected that the work of this commission will be continued. It is felt by the members of the Commission in the United States, the leading veterinarians there, and also by those in Canada, that this is perhaps the most valuable report that has ever appeared on tuberculosis in cattle. Not only veterinarians but breeders, representatives of the meat industry, and health workers were interested in it.

MR. OSLER: It could very well be endorsed.

The Conference endorsed the Report by the adoption of the resolution appearing on page 172.

Dr. McCullough moved that:

Whereas in some parts of our cities and towns, and even in some of the smaller communities, there is evidence of overcrowding and unsanitary housing conditions and whereas these conditions have a deleterious effect upon the public health; *resolved* that the Public Health Committee of the Commission of Conservation be requested to enquire into the housing and slum conditions existing in Canada.

DR. REID: I would add a resolution to the effect that the same examination should be made of our modern houses, with regard to the ventilation in them. Many of them are nothing but hot beds of pneumonia, particularly in the winter, when the hot water heating brings in hot air but does not exhaust the bad air. In that respect, I fancy the houses in the slums are better than some modern buildings.

DR. SEYMOUR: I would like to draw attention to the fact that the Supreme Court of British Columbia has decided that the provincial authorities there have no control over the question of milk sup-

* The Report of the International Commission on the Control of Bovine Tuberculosis had been printed in pamphlet form and placed in the hands of those attending the Conference.

ply. The Court has decided that it is altogether a federal question. We have made regulations assuming we had control, but the decision of the British Columbia Supreme Court is that it is a federal question. I think the Commission should draw the attention of the Government to this matter and have them properly carry out the supervision of all milk, or else have such legislation enacted as will give that power to the provinces. This power according to the British Columbia decision, they do not now have. The death rate among children from dirty milk is enormous throughout Canada, and we are endeavouring to take drastic measures in Saskatchewan towards improving the quality. Our magistrates have imposed fines, but as soon as it is known that our action is *ultra vires*, we will have to stop.

MR. SIFTON: Where does your difficulty arise? The provincial authority has the right to control dairies.

DR. SEYMOUR: We assume that, and are doing so, but in British Columbia the decision has been given, and has been confirmed by the Supreme Court of British Columbia, to the effect that the provincial authorities have nothing to do with the control of milk.

MR. WOOD: There must be some other question involved.

MR. SIFTON: If the question came up, it could be urged that the sale of milk is a matter of trade and commerce, and if you undertake to regulate the sale of milk, it becomes *ultra vires*; but you have authority to regulate what kind of industry shall be carried on in the city where the health of a municipality is affected, and you can regulate the keeping of dairies as Toronto and Ottawa do.

MR. OSLER: I think there is something wrong.

DR. SEYMOUR: It is a most important matter to us.

Dr. Simpson moved the adoption of the report of the Committee. Carried.

Dr. C. H. Higgins, Pathologist of the Dominion Department of Agriculture, then read the following paper:

A Federal Health Laboratory and the Manufacture of Antitoxins and Sera

The subject with which my name is associated on the programme is a very broad one, and suggests matters of policy necessitating very careful consideration, and a full knowledge of the various interests

concerned, some of which are of a controversial nature. I can, however, discuss some of the features having an intimate bearing on certain features of the topic, which will enable you to see some of the problems from the standpoint of the comparative pathologist and laboratory worker.

A federal health laboratory would supply, for general health work, what the present Biological Laboratory furnishes for the work in connection with the control of the contagious diseases of animals. This requirement is not provided for at present.

The introduction of bubonic plague or Asiatic cholera at any of the coast quarantine stations would demand the services of men trained in laboratory technique and these men must have a knowledge, other than theoretical, of the problems involved in rapid diagnosis and the preparation of prophylactic vaccines for either disease. Personally, I had some experience in the preparation of Haffkine's prophylactic some ten years ago at the Federal Public Health Quarantine Station on the Pacific coast and am aware, from actual experience, that more than ordinary bacteriological skill is required in its preparation, if accidents are to be avoided and an effective vaccine produced.

Federal health problems are also dependent to a very large degree upon the quality of disinfecting fluids. Federal, provincial and local health boards are advising the wholesale use of disinfectants in an effort to control infectious diseases and many of these disinfectants, which are extensively advertised, have proven of little or no value. It would be within the scope of a federal health laboratory to test various disinfecting agents on the market and advise as to their efficiency in certain strengths, as well as to point out those of little or no value. By this means the general efficiency of health control work would be greatly increased.

A federal health laboratory could study problems involving the interests of the country at large, which are at present without the scope of the Provincial Health and other laboratories.

With such a laboratory the duplication of work would also be avoided, a factor of no small import, as conservation tends toward centralization in an effort to secure economy.

With the nucleus which we already have at the present Biological Laboratory, it would be a very easy matter to sufficiently increase its scope to embrace the health problems that are of immediate

concern, and gradually develop its usefulness as necessity requires. By building on this foundation, which is already beyond the experimental stage, there is the advantage of avoiding many of the pitfalls common to the establishment of any new institution. These pitfalls are many, as every individual with an intimate knowledge of the management of a laboratory engaged in bacteriological studies can attest. The keeping of an adequate supply of the necessary small animals alone requires considerable skill in their handling and breeding.

With regard to sera I may state, that having been charged for a number of years with the responsibility of preparing a number of biological products, for use in connection with the contagious diseases of animals' control work, of the Health of Animals Branch of the Department of Agriculture, I have been very forcibly impressed with the need for an adequate supervision over all biological preparations designed for the detection, prevention or treatment of disease in men and animals.

The many technicalities connected with these very important preparations would prove uninteresting and I will, therefore, present what appear to me to be the most salient features for your consideration.

Sera, vaccines, toxins, antitoxins and analogous products, when they are properly prepared, standardized and intelligently used, assist in the prevention, control and cure of diseases due to specific infectious agents.

That the preparation and standardization are important factors, is evidenced by the varying results obtained in tests of the commercial sera in various laboratories prior to the establishment of a standard unit. (No standard unit has been established for these products in Canada.) Where legislative enactment exercises constant supervision over the method of preparation and standardization of these products, their quality may safely be relied upon. Canada exercises no supervision over the manufacture of any of these products save those prepared at the Biological Laboratory, nor is any responsibility assumed for dealing with any product found to be of a lower degree of potency than that specified by the manufacturer.

Furthermore, it may be mentioned that the outbreak of foot-and-mouth disease in the United States during 1908 was attributed to contaminated small-pox vaccine. The result has been that they

have since drafted regulations with a view to preventing a similar occurrence in the future. We are thus impressed with the fact that the conservation of a country's resources involves more than the public health aspects of the adequate supervision of biological products.

With preparations involving such rigid bacteriological technique, such intimate knowledge of the care, feeding and ailments of the animals from which many are produced, it is clear that they should be manufactured under such regulations, that their purity and potency may, at all times, be vouched for.

From the somewhat rambling remarks offered, I believe that I have been able to point out some of the advantages from the public health standpoint in broadening the scope and unifying present federal laboratories, so that they may include to a greater degree than has heretofore been possible, work having a direct bearing on public health problems.

I believe that I have also been able to show you that, in your deliberations, more than passing attention should be given to the adequate federal supervision of all commercial biological products offered for sale in Canada.

TABLE SHOWING THE VARIABILITY OF ANTI-TETANIC SERUM

As published in bulletin 421 of the United States Bureau of
Animal Industry

able No.	Manufacturer	Exchange Date	Laboratory No.	Labelled to contain	Total units in syringe
1	H. K. Mulford Co.	May 1, 1910	2,960	500,000	615
2	Park Davis & Co.	Nov. 24, 1910	....	not stated	1,250
3	H. K. Mulford Co.	May 15, 1910	2,960	500,000	607
4	Pasteur Laboratories, Paris, France. . . . .	.....	...	.....	1,000
5	Lederle Antitoxin Laboratories	June 10, 1910	19A	1,500	1,601
6	Parke Davis & Co.	Dec. 8, 1910	....	.....	1,250
7	Parke Davis & Co.	Dec. 8, 1910	....	.....	1,250
8	Parke Davis & Co.	Jan. 14, 1911	....	.....	1,000
9	H. K. Mulford Co.	May 15, 1910	2,971	500,000	472
10	Pasteur Laboratories, Paris, France. . . . .	.....	....	.....	1,100
11	Pasteur Laboratories, Paris, France. . . . .	.....	....	.....	1,530
12	H. K. Mulford Co.	May 1, 1910	2,960	500,000	607
13	Lederle Antitoxin Laboratories	June 21, 1910	19A	1,500	1,972
14	Pasteur Laboratories, Paris, France. . . . .	.....	....	.....	1,530

Memorandum on Biological Laboratories *

For the maintenance of efficiency in the several branches of the Government Service which relate to the health of the people it is necessary that the officers of the Dominion Government be kept up to the high standard set by other countries, particularly Great Britain, the United States, and Germany where, by the establishment of government laboratories, opportunity is afforded for these public servants to keep abreast of the latest scientific, experimental, and research work.

At the present time, the Dominion Government has several laboratories established in connection with different branches of departmental work, notably, that of the Department of Agriculture, under the direction of the Veterinary Director General, where experimental and research work has efficiently been carried on for some years to the material benefit of the farmers and owners of live stock of all kinds. From this laboratory there have been sent out, either free of charge, or at a nominal price, biological preparations of different kinds for the prevention and treatment of diseases in animals.

In nearly all of the provinces, the provincial governments have well equipped laboratories (chemical and biological) under the direction of the health authorities, for the benefit of the public, but their use is restricted to the examination of water sewage and pathological specimens relating to communicable diseases.

There are no laboratories in Canada such as are suggested in the first paragraph of this memorandum and any information given to the public and the medical profession is derived from foreign sources, i.e., laboratories maintained for this special purpose by national governments. This is much to be regretted as there are conditions existing in Canada which can only be intelligently studied, and the facts deduced properly applied, by and through the medium of a national laboratory.

In the case of some of what may be termed the newer communicable diseases to be found on this continent, our only source of information and our only authority to which we can turn for guidance

*Prepared by Dr. C. A. Hodgetts.

and direction are the Laboratories of the Public Health and Marine Hospital Service at Washington.

We have not here in Canada anything even approaching the experimental and research laboratories of the city of New York; and at the present time, for the treatment of rabies in the human being, we have to look to these laboratories at Washington and New York for the Pasteur treatment; while in the case of this disease in animals, provision is made in the laboratories of the Department of Agriculture in this city.

As a matter of fact, nothing is being done in the Dominion to study the great and important question of cancer of which so many of our people die annually. This subject alone is worthy of consideration as an important factor in deciding upon the establishment of a national laboratory.

In establishing public health laboratories for experimental, research, and manufacturing work, the Government would not in any way conflict with the work now carried on by some of the provinces, nor would it duplicate any work of the universities.

As to the production of antitoxins and other biological products, the methods to be adopted would be along similar lines to those used in the laboratories of the Veterinary Branch of the Department of Agriculture, which, for some years, has manufactured and supplied, either free of charge or at actual cost, several biological products used in veterinary medicine.

The chief biological product in use in general medicine in all portions of the Dominion is diphtheria antitoxin. Many others are in use, but owing to their excessive cost, the demand is limited; while one in particular, antimeningitis serum, it will be almost impossible shortly to obtain, as the Rockefeller Institute has intimated that it will shortly discontinue the manufacture of it in its laboratories. Further, the preparation of vaccines to combat diseases due to gonococci, streptococci, staphylococci, colon bacilli, typhoid bacilli, and other bacteria, is daily becoming more urgent, if the modern methods of medical practice are to continue in this country.

The cost of diphtheria antitoxin as reported by both the State Boards of Health of the state of New York and of the city of New York is six cents per 1,000 units; while the retail price as quoted by the leading American producers is \$2.00 per 1,000 units: the retail price of 5,000 units, which is a usual dose, is quoted at \$7.50, as

against the actual cost of thirty cents; while the syringe container costs the above mentioned Boards of Health eighteen cents each, a cost of forty-eight cents per dose, as against \$7.50, that now paid by the public. If this antitoxin could be manufactured in a government laboratory its use would be greatly extended for preventive purposes, thereby lessening the incident of diphtheria and reducing the death rate from the disease.

Again, in the case of tetanus antitoxin, the present charge for each treatment is not less than \$25.00: the New York State Department of Health manufactures it at a cost of sixty cents per treatment.

As a fair guide to what might be expected of the laboratories of the Dominion of Canada, the output of that of New York State may be taken as a fair criterion, viz.: thirty-six million units of diphtheria antitoxin—to produce which it requires at least twelve horses. In addition to which there are required some 200 guinea pigs together with rabbits and other animals.

The requirements for the establishment of such laboratories as outlined, would be:

- (a) A suitable building—one unit—at a cost of.. ..\$10,000
- (b) Fitting and apparatus.. .. . 5,000
- Other supplies and animals.. .. . 3,000
- (c) Staff—One director.. .. . \$2,500 to \$3,000
- Two skilled bacteriologists (with
- medical education).. .. . \$1,500 to \$1,800
- One skilled physiological chemist.. \$1,500 to \$1,800
- Two laboratory helpers, one stable-
- man and helper... .. \$2,000 to \$2,500

Taking the output of the two laboratories mentioned as a fair average of what diphtheria antitoxin might be sent out, from a Dominion laboratory, we find that 6,000 doses of 5,000 units each were distributed by each, which, at the retail prices previously quoted, represents \$45,000; while the actual cost, including container, would be within the neighbourhood of \$3,000.

The great benefit accruing to the people generally by reason of the research and experimental work is of such a character that it is impossible to estimate its worth in dollars and cents.

In regard to the various biological products sold in Canada to-day there is no Government control or inspection—no guarantee, such as is exacted by the Federal Government of the United States,

which controls the various laboratories located in that country where the products are manufactured. The paper presented by Dr. Higgins on this subject shows the great discrepancies existing as between the stated value of the several products used for veterinary treatment over which the United States Government exercises no control, and that actually found to exist. We have no guarantee that similar discrepancies do not exist in Canada in respect to the biological products sold for use in human beings.

DR. FAGAN: I was going to bring up the question of the inspection of foods in Canada. I told you the other day about a case we had in the West, a milk case which we had in the police court. The magistrate found the man guilty of adulterating his milk and imposed a fine of \$100. There was an appeal from the decision and the judge held that the examination of milk, and prosecutions following such examinations, was not a question for the Provincial Government, but for the Dominion. The Dominion Government does not do it, and I do not believe it could do it. The inspection of milk as of similar articles of food, is of such a huge kind and has to be handled so generally, that the Dominion Government have not sufficient officers to handle it intelligently and effectively. For instance, in British Columbia, I happen to be their officer so far as doing this goes, but I could not take time to examine milk and go around to different places giving evidence, and mine is the only evidence that could be accepted. That is a foolish position. The matter has to be attended to in such a way that the local authorities will have power to use the act and have its own officials put it into effect. If this meeting could pass a resolution asking the Government to extend the powers under the Act to others than its officials—

MR. OSLER: You mean that the official of a province has no right to take action in reference to the adulteration of milk.

DR. FAGAN: That has been decided with us.

MR. OSLER: And the only prosecution is by the Dominion authorities?

DR. FAGAN: By the Dominion authorities. That has been decided in a case with us. There was an appeal from that and Judge Clements gave the decision. There was an appeal from his decision to the full Court, and the full Court, instead of dealing with the question of who had the authority, went off on a little side issue about the wording of our by-laws and confirmed the decision.

MR. SIFTON: Where does the impure milk come from?

DR. FAGAN: This was in Vancouver.

MR. SIFTON: You can regulate the place it comes from, regulate the dairy. The matter of trade and commerce is unquestionably a federal question and the passage of such laws as relate to the adulteration of food or drink, pure food laws, would come under the federal authority. You have municipal authorities, regulating dairies, and the preparation of milk, and the conditions under which it is sold. It is a question of how you go at it. If you go at it by passing a law to regulate trade and commerce, it is an infringement of federal rights. You can get at it by means of municipal licenses.

DR. FAGAN: If a dairyman puts a glass of water in his milk, the local authorities have no power to prosecute.

SENATOR DEVEBER: You do not need any change in the law. In all organized municipalities, they make their own city by-laws and under those by-laws, they regulate the sale of milk. In most places, you can control all the people who supply milk. They have to apply for a license to the city health officer, and in the application, they sign their names to an agreement that they will abide by all city by-laws and the decision of the health officer in regard to their license. If they break their agreement, their license is cancelled. For instance, in most cities, they establish a certain standard of butterfat, three per cent. or three and a half per cent. Samples of milk are gathered from the milk vendors in the street and are examined. I know in Lethbridge, I have taken samples from every vendor once a week. If he goes below three per cent., which we will raise to three and a half per cent. next year, his license is cancelled. Two of them were below the three per cent. and I cut their licenses right off. There is no kick coming, we do not have to try them. They enter into an agreement with me to perform certain conditions; if they do not, their licenses are cancelled and they agree to that. The only case where we look for any help from either provincial or other authorities, is in putting a tuberculin test to the cow. As a city, we are not in a position to do that. We are trying to get the Provincial Government to go to different places and apply the tuberculin test. Otherwise, we feel confident that we can control the milk.

DR. HODGETTS: It is not a question of stopping a man selling.

SENATOR DEVEBER: We have a right to make the examination.

DR. FAGAN: This man was fined \$100 and we had no authority to do that.

MR. SIFTON: You could pass a by-law that no milk should be sold except under license and you would then simply say that milk should not be sold in Victoria, except under license. The public health officer inspects the dairies.

MR. WOOD: That is the way in Winnipeg and we have no difficulties.

SENATOR DEVEBER: The percentage of three per cent. is pretty low and in order to encourage the man who supplies good milk, I publish in the papers every week, the result of the test. The consequence is that I had two samples of milk a few days before I came down, with five per cent. of butter fat. They have been coming up ever since we started, they are tumbling over one another to try and get the trade. If you publish the returns, they will not run any milk through the separator and take out a large percentage of the cream.

DR. FAGAN: Getting the license is purely a question of getting around the law.

MR. SIFTON: In law, there are many things you can do one way that you cannot another.

DR. FAGAN: Should not a recommendation go in to have prosecutions by others than the analyst?

MR. OSLER: If that is carried out, and there are one or two other cases, you will quickly find the law changed. If that judgment should be sustained, you will soon find a change made to get around it some way.

DR. FAGAN: I think the same thing holds true of other articles. There are many articles of food that we have not the power to deal with. Food is something that is handled all over, and the central authority cannot properly handle it everywhere. Under the Adulteration Act, we have one man in one province, and perhaps another in another. They have to send samples to Ottawa for analysis and send a man from Ottawa perhaps to Calgary to prosecute. We ought to appeal to them to make the Act more general in its administration and not limit it to a certain class of men. The people should be easily protected because when an article of milk is taken up, they take three samples, give one to the man who sells, one to the local analyst and send the other to Ottawa. If they gave the power to men not Dominion officers to carry the Act into effect, it would mean that food would be looked after more generally than it is to-day.

Dr. Fagan read the revised report of the Committee on Tuberculosis.*

MR. OSLER: The great difficulty is to get the Federal Government to give a direct money grant to various hospitals.

MR. SIFTON: It may not be wise to make an application for a grant of so much per case, that might raise a prejudice against the application. I think that probably it can be got at in another way. I think the Federal Government would give as much towards the support of tuberculosis hospitals as the twenty-five per cent. would amount to, but I doubt if it would give a percentage of the cost because that would be assuming a distinct and definite burden up to a certain figure, as though it was its obligation, when it was not. But I think we can get it to contribute just as much money in another way. It seems to me that if that was put in a more general way and just said "Substantial assistance ought to be given," it would be more effective.

MR. OSLER: They will not give a direct daily grant.

DR. BRYCE: Mr. Sifton yesterday suggested the giving of a grant and the only method we would think of was on the basis of the per capita expenditure from day to day.

MR. SIFTON: If we make the request in a more general way—

MR. OSLER: That financial assistance should be given by the Federal Government to aid in that direction.

DR. HODGETTS: "Resolved, therefore, that the Federal authorities should give substantial assistance, both for supporting and carrying on such work already in existence and to encourage the further establishment of new sanatoria and hospitals for consumptives."

The report was adopted.

MR. OSLER: Some small committee should be appointed to suggest some plan of putting this into effect.

DR. McCULLOUGH: Would it not be a practical solution of the difficulty to ask the Government to set aside a sum of money each year for the Commission of Conservation, for the purpose of dealing with this subject of tuberculosis, the same to be expended under the advice of this Conference.

MR. OSLER: That might be a suggestion.

DR. BÉLAND: You will have to satisfy the Minister that the provinces shall have their share.

* See page 170.

MR. SIFTON: If the proposal for the establishment of a National Council of Health is carried into effect, the method of doing that will have to be considered, and if that is done, of course, any money will be expended under that body. That is what it is for.

MR. OSLER: No action can be taken under this just now.

MR. SIFTON: Your Committee will have to discuss that later.

MR. OSLER: That will have to come from this National Council of Health.

DR. HODGETTS: The carrying on of this would rest with the Commission of Conservation, would it not? There is no necessity to call this Council together.

DR. McCULLOUGH moved that the report of the committee be amended by adding the words, "that the Federal Government be asked to vote a certain sum of money each year for the suppression of tuberculosis, the said money to be expended by the Commission of Conservation under direction of this Conference."

MR. OSLER: Would you mind leaving that as a sort of recommendation, because the Committee meeting the Government might find that the Government, after discussion, had a different way in which to assist.

DR. McCULLOUGH: I move that this be a recommendation to the Committee.

DR. REID: The Committee's recommendation seems to me to cover the ground any way.

MR. OSLER: It is suggested to the Committee instead of altering the resolution.

MR. OSLER: That finishes the work of the Conference, unless anyone has anything more to bring up. I think you all deserve thanks for coming from various distances to attend here, and we should all thank Mr. Sifton for the very great interest he has taken. He is not only the Chairman of the general Commission but he is the guiding spirit in each committee, and without his direction, I am quite sure we would fall very far short of what we are doing in this Committee. I am sure all of us here owe a great deal to his great energy and the thought he has given to these matters.

Opinions of the Provinces

Early in the new year (1911) communications were sent to the premiers of the several provinces and to the secretaries or commissioners of the Provincial Boards of Health, asking their opinions on the recommendations adopted by the Public Health Conference. Copies of these recommendations were enclosed, and special attention was drawn to the clause relating to the pollution of waterways by municipalities. Texts of a number of replies received are given in part herewith:—

Hon. F. L. HASZARD, Premier of Prince Edward Island, said:

“I have carefully read the Report and I am in full accord with the propositions therein contained. I believe that they are all along the right lines, and in many of the provinces, highly desirable. With regard to our own Province, very few of the points mentioned would require to have any legislation, as we have no fresh water streams here that are subject to pollution from any cause preventable. If, however, there is any legislation necessary on our part, I think I would be safe in saying that our Legislature would be quite willing to do what is necessary to keep in line with the other Provinces.”

HON. WALTER SCOTT, the Premier of Saskatchewan, endorsed the recommendations in the following statements:

“I beg to inform you that I have submitted the recommendations to my colleagues and am authorized to state that they severally meet with our hearty and entire approval.

“We shall take steps in conformity with the recommendation for giving our Bureau of Health supervision of vital statistics, and for the adoption of the international system in this regard.

“This Government would especially urge the extreme desirability of the early enactment and enforcement of your proposed federal law to prevent the pollution of waters.”

The following communication was received from Mr. Lawrence McRae, private secretary to Premier McBride, of British Columbia:

"By direction of the Hon. the Premier, I am to state that the recommendations will receive early consideration."

HON. G. H. MURRAY, Provincial Secretary of Nova Scotia, wrote as follows:

"I am heartily in accord with the spirit of the proposed legislation and will do whatever I can to help carry the idea out."

MR. CHAS. LANCTOT, Deputy Attorney General of the province of Quebec, in concluding his reply said:

"I beg to state that the questions raised in these reports are numerous and important and that they will receive the full consideration of the Government."

DR. H. D. JOHNSON, Secretary of the Board of Health, of Prince Edward Island, said:

"With reference to a communication from you *re* the resolutions of the Committee on Pollution of Waterways, I may say that I brought the matter to the notice of Premier Haszard, and he is desirous of doing everything that is in the interests of the health of our people, and will have this matter attended to."

DR. McCULLOUGH, Chief Health Officer of Ontario, in his reply, said:

"I beg to acknowledge the receipt of your favour of the 7th inst. *re* the clauses in the report of the Committee on the Pollution of Waterways, and so far as this Province is concerned the matter will be attended to."

MR. E. M. WOOD, the Secretary of the Manitoba Board of Health, replied as follows:

"I beg to acknowledge receipt of your letter of the 7th inst. and beg to state that the subject matter thereof will be taken into consideration at the next session of the Legislature."

At a meeting of the Manitoba Board of Health, held in October, 1910, the following resolution was passed in reference to the pollution of our rivers and waterways:

"That the Board views with apprehension the pollution of the waterways of the Province by raw sewage and expresses the view that legislation should be enacted without delay prohibiting any person, corporation or municipality from placing or discharging, or continuing placing or discharging, any solid or liquid sewage or other poisonous matter into any navigable or other waters within the Province, except under conditions to be definitely determined. That the Board is particularly impressed with the fact that the pollution of the Red and Assiniboine rivers especially has become so acute at some points as to constitute a menace to the public health and has reached a stage when the necessity exists for purification and sewage disposal plants to be established. That a copy of this resolution be sent by the Secretary, to the Premier of the Province, the Commission of Conservation, Ottawa, and all the Municipal Councils concerned."

DR. M. M. SEYMOUR, Commissioner of Public Health for Saskatchewan, stated in his reply:

"The Premier, who has also received your communication, has already conferred with me regarding the matter, and the suggestions and recommendations which have been made by the Conference will receive immediate attention."

DR. L. E. W. IRVING, Provincial Health Officer of the province of Alberta, in his reply, says:

"I may say for your information that at the last session of our Legislature the first Public Health Act of this Province was repealed, and a new Public Health Act was assented to on December 6th, 1910; this new act comes into force the 1st day of March, 1911."

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